ORDER NO. KM49305537C1
F1

Service Manual

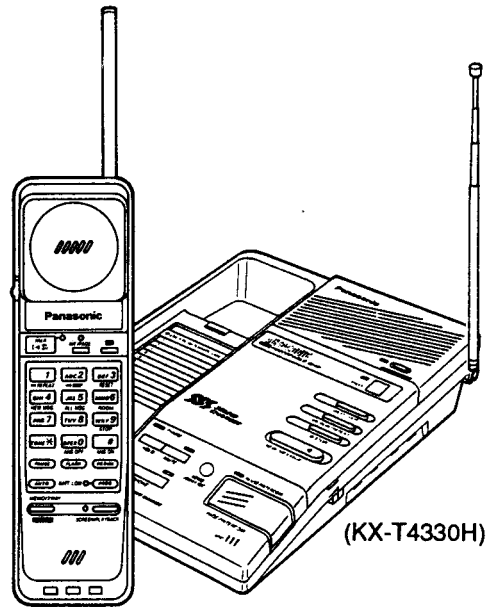
and Technical Guide

AUTO-LOGIC™
Cordless Telephone Answering System

Telephone Equipment

KX-T4330

(for U.S.A.)



(KX-T4330R) (KX-T4330H)

■ SPECIFICATIONS

General

Modulation:	FM, 5 kHz Deviation
Frequency Stability:	±2.5 kHz
Dial Type:	Tone (DTMF)/Pulse
Redial:	Last dialed number each time the Redial button is pressed
Pause:	3.5 seconds per pause
Memory Capacity:	10 telephone numbers, up to 16 digits per station

Tape Deck Section:

Greeting Message:	Recorded a microchip. Recording Time is 16 seconds.
Incoming Message (ICM):	Single Micro Cassette (MC-30)
Tape Speed:	2.4 cm/s
Wow and Flutter:	0.58% (WRMS)
Motor:	Electrical governor motor

	Base Unit (KX-T4330H)	Portable Handset (KX-T4330R)
Power Source: (Receiver Section)	AC adaptor KX-A11-W-5 (DC 12 V)	Built-in rechargeable Ni-Cd battery (KX-A36A)
Receiving Frequency:	10 channels within 49.6 to 49.9 MHz	10 channels within 46.6 to 46.9 MHz
Adjacent Channel Rejection:	40 dB	40 dB
Sensitivity:	1 dBμV for 20 dB S/N	2 dBμV for 20 dB S/N
(Transmitter Section)		
Transmitting Frequency:	10 channels within 46.6 to 46.9 MHz	10 channels within 49.6 to 49.9 MHz
Jacks:	DC IN, Telephone line	
Antenna:	Telescopic	Retractable Rubber Flexible
Speaker:	2″ (5 cm) PM dynamic	1.2″ (3 cm) dynamic
Microphone:	Condenser microphone	Condenser microphone
Dimensions (H × W × D):	2 1/16″×6 25/32″×8 29/32″ (68×172×226 mm)	1 11 3/32″×2 1/32″×2 1/16″ (290×60×52 mm)
Weight:	1.6 lbs. (733 g)	0.57 lbs. (257 g) with battery

Design and specifications are subject to change without notice.

Panasonic

When you mention the serial number, write down the 11 digits. The serial number may be found on the label affixed to the bottom of the unit.

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LOCATION OF CONTROLS

Portable Handset (KX-T4330R)

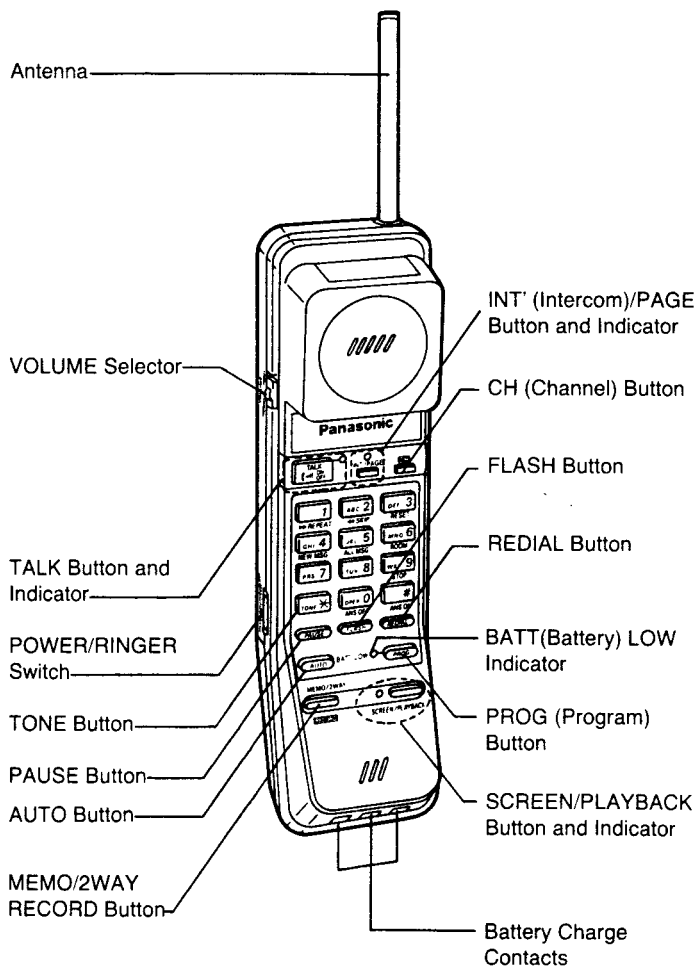
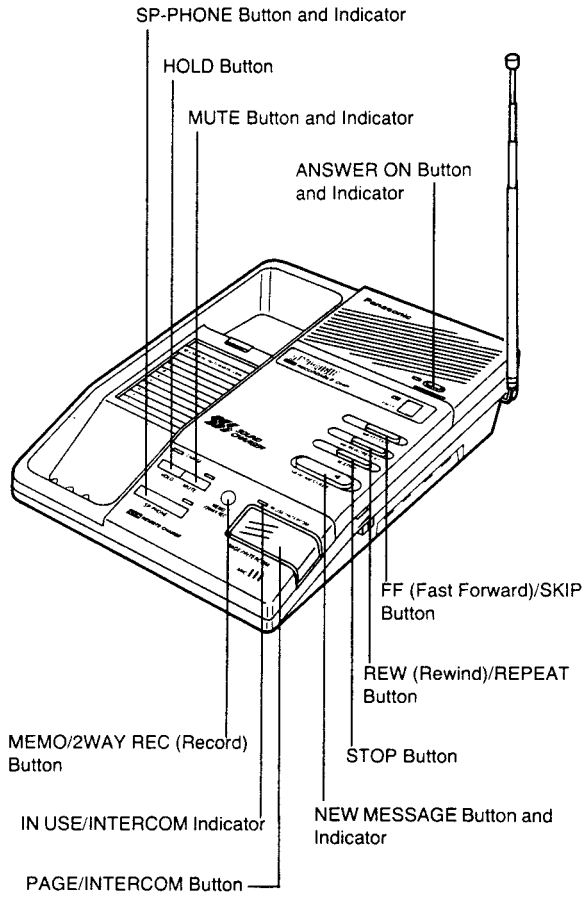
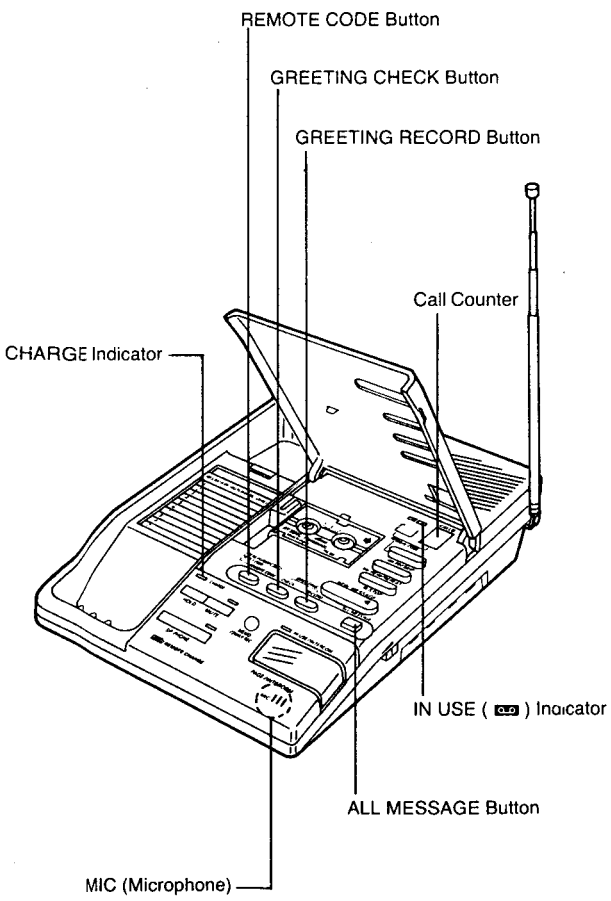


Fig. 1

Base Unit
(KX-T4330H)





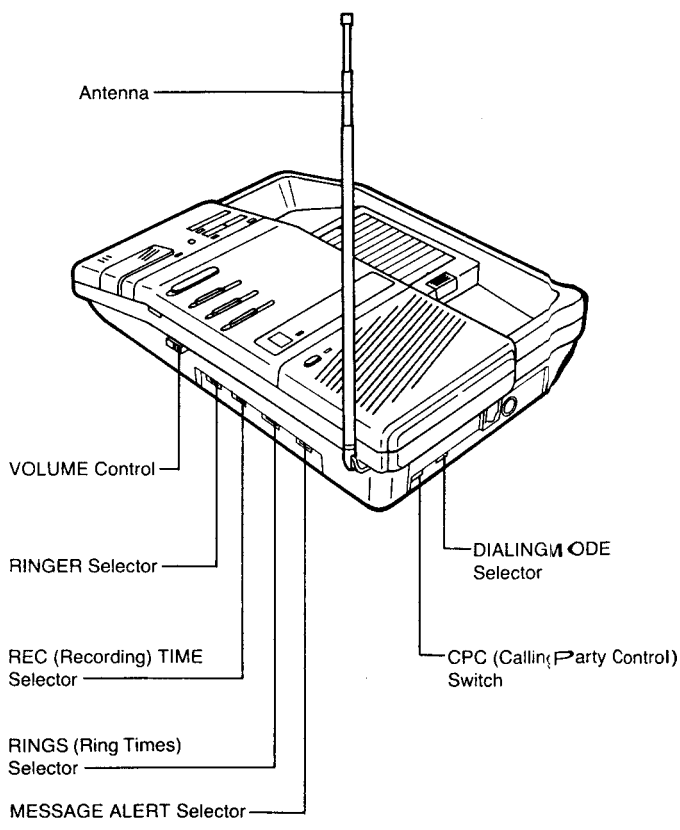


Fig. 2

BATTERY REPLACEMENT

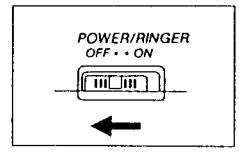
Standard battery life

If your Panasonic battery is fully charged:

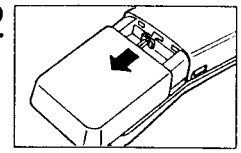
In TALK mode	Up to about 7 hours
In Stand-by mode	Up to 14 days

(Battery life may vary depending on usage condition and surrounding temperature.)

Replace the battery with a new one if the BATT LOW indicator flashes after a few telephone calls even when the battery has been charged for 10 hours.

1 

Set the POWER/RINGER switch on the portable handset to the OFF position, to prevent the memory loss.

2 

Remove the battery compartment cover.

3

Replace the battery.

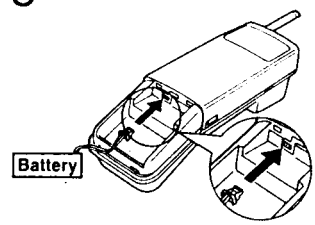


Fig. 3

CONNECTION TO A TELEPHONE LINE

This connection is U.S.A. version only.

Refer to the simplified manual (cover) for Canada or other areas.

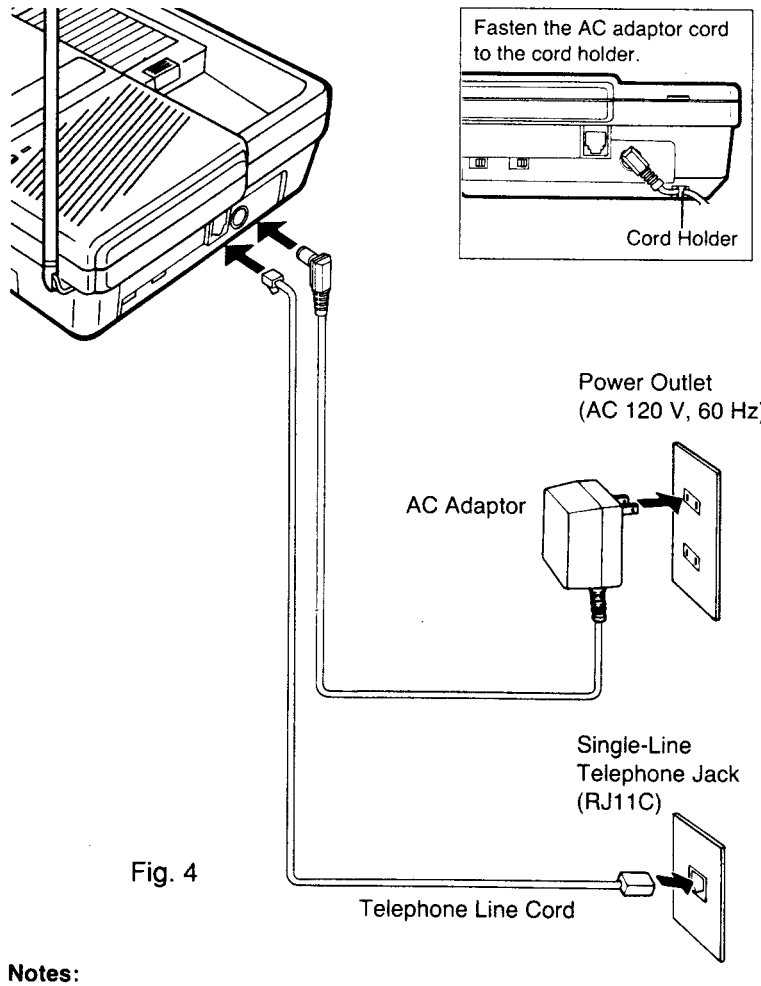


Fig. 4

Notes:

—USE ONLY Panasonic AC ADAPTOR KX-A11-W-5. It must remain connected at all times.

—The unit will not function during a power failure. We recommend you connect a reserve telephone on the same line for power failure protection.

DISASSEMBLY INSTRUCTIONS

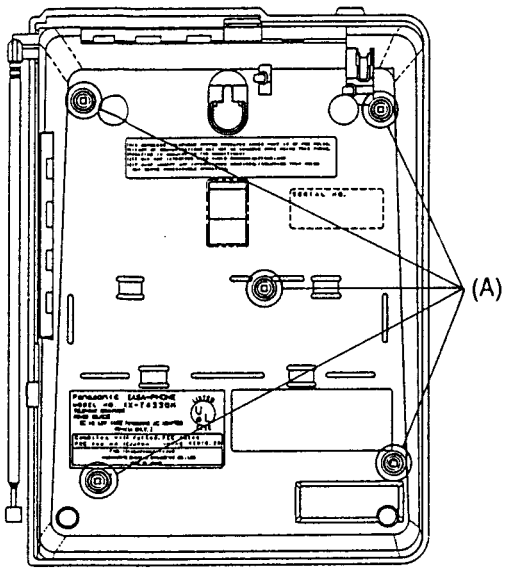


Fig. 5

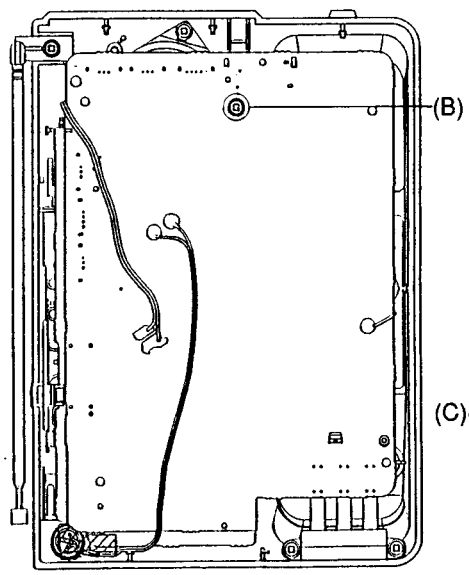


Fig. 6

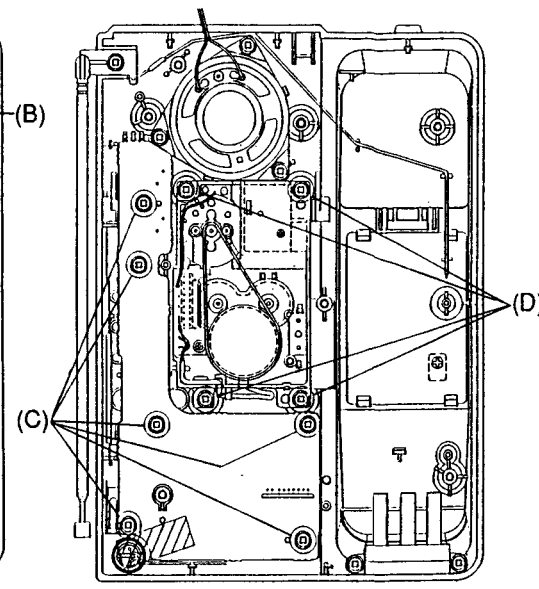


Fig. 7

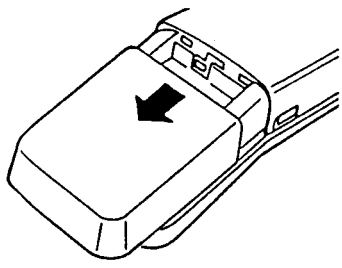


Fig. 8

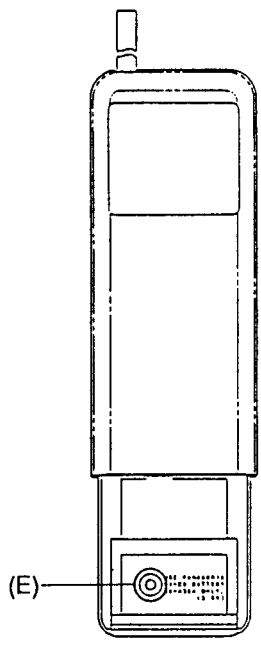


Fig. 9

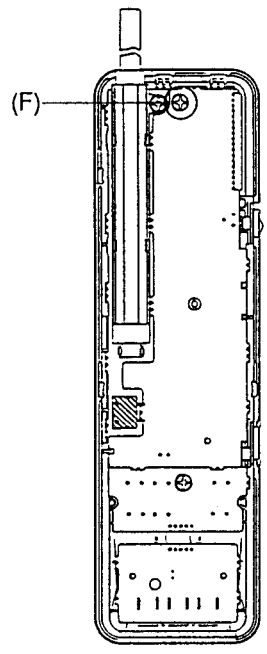


Fig. 10

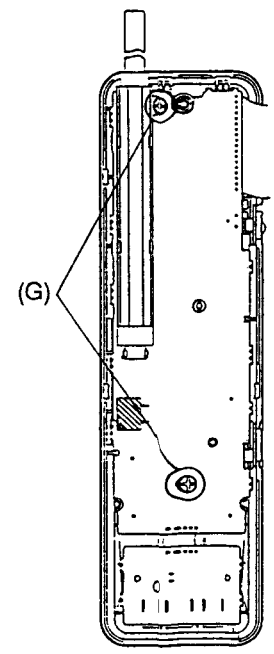


Fig. 11

Ref. No.	Procedure	Shown In Fig.—	To remove—.	Remove—.
1	1	5	Lower Cabinet	Screws (3×16) ..... (A)×5
2	1, 2	6	Printed Circuit Board	Screw (3×10) ..... (B)×1
3	1~4	7	Operational P.C. Board	Screws (3×10) ..... (C)×6
4		7	Cassette Deck	Screws (3×10) ..... (D)×4
5	5, 6	8	Rear Cabinet	Remove the battery compartment cover
6		9		Screw (2.6×10) ..... (E)×1
7	5~7	10	Printed Circuit Board	Screw (2.6×10) ..... (F)×1
8	5~8	11		Screws (2.6×10) ..... (G)×2

OPERATIONS

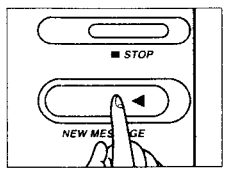
NEW OPERATIONS

Listening to the recorded messages

When new incoming messages have been recorded;
—the call counter shows the number of recorded messages up to 9.
—the NEW MESSAGE indicator flashes.
—the base unit beeps every 10 seconds if the MESSAGE ALERT selector is set to "ON".

Listening to new messages only

Only new messages are played back. Messages once reviewed will not be played back.

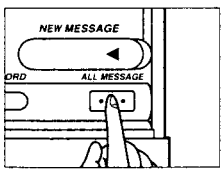


Press the NEW MESSAGE button.

—The unit rewinds the tape and starts playback.
—At the end of playback, 3 beeps sound and the tape stops automatically.

Listening to all the recorded messages

All the recorded messages—including those previously reviewed or saved—will be played back from the beginning of the tape.



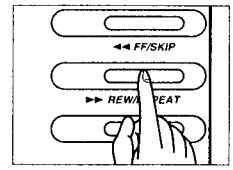
Press the ALL MESSAGE button.

—The unit rewinds the tape and starts playback.
—At the end of playback, 3 beeps sound and the tape stops automatically.

Note:
—After playback, the messages are saved.

During message playback

Repeating the message

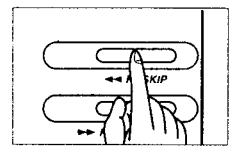


Press the REW/REPEAT button.

—The unit rewinds the tape to the beginning of the message and starts playback again.

Note:
—If you press the REW/REPEAT button within 5 seconds of playing back the message, the unit will play back the previous message.

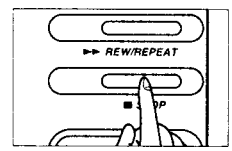
Skipping the message



Press the FF/SKIP button.

—The unit forwards the tape to the beginning of the next message and starts playback again.

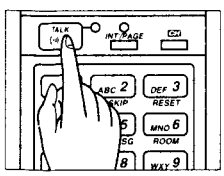
Stopping the operation



Press the STOP button to stop playing back, or other operation.

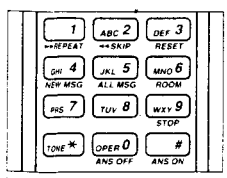
NORMAL OPERATIONS

MAKING CALLS

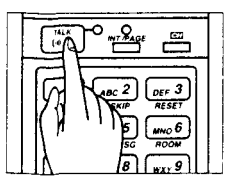
1 

Press the TALK button to get dial tone.

—The TALK indicator light is on.

2 

Dial a telephone number.

3 

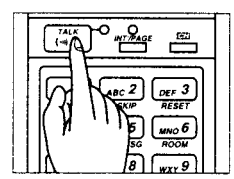
To hang up, press the TALK button or place the portable handset on the base unit.

—The TALK indicator light goes out.

ANSWERING CALLS

With the portable handset

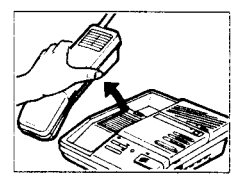
Make sure that the POWER/RINGER switch is set to "ON", or the portable handset will not ring.

1 

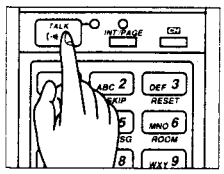
If the portable handset is off the base unit:
When the telephone rings, press the TALK button to answer the call.

—The TALK indicator light is on.

OR



If the portable handset is on the base unit:
When the telephone rings, lift the portable handset to answer the call.

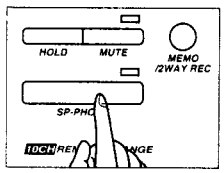
2 

To hang up, press the TALK button or place the portable handset on the base unit.

—The TALK indicator light goes out.

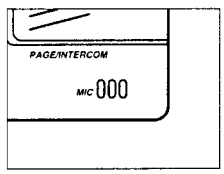
With the base unit

Make sure that the RINGER selector is set to "HIGH" or "LOW", or the base unit will not ring.

1 

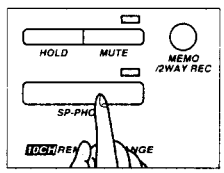
When the telephone rings, press the SP-PHONE button to answer the call.

—The SP-PHONE indicator light is on.

2 

Speak into the MIC (microphone).

—Adjust the speaker volume using the VOLUME control on the right side.

3 

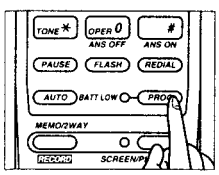
To hang up, press the SP-PHONE button.

—The SP-PHONE indicator light goes out.

AUTOMATIC DIALING

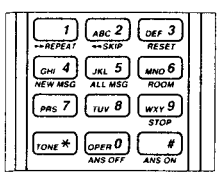
Storing phone numbers in memory

The dialing buttons (0 through 9) function as memory stations for automatic dialing. A 16-digit phone number can be stored in each station.

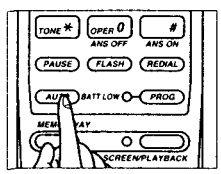
1 

Press the PROG button to switch the unit to the programming mode.

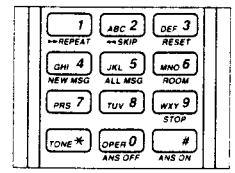
—The BATT LOW indicator light is on.

2 

Enter a phone number up to 16 digits.

3 

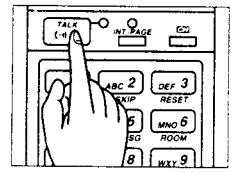
Press the AUTO button.

4 

Press one of the dialing buttons (0 through 9) to select the memory station.

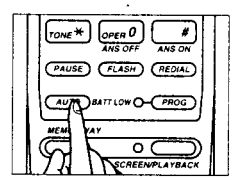
—The phone number is stored in that memory location.
—To store other numbers, repeat steps 1 through 4.

Dialing a stored number from memory

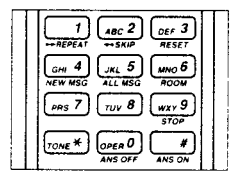
1 

Press the TALK button to get dial tone.

—The TALK indicator light is on.

2 

Press the AUTO button.

3 

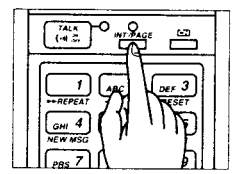
Press the dialing button (0 through 9) where the phone number you want to dial is stored.

—The stored number is dialed automatically.

INTERCOM

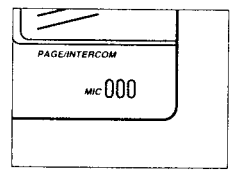
You can use the portable handset and the base unit as a 2-way intercom.

Paging the base unit from the portable handset

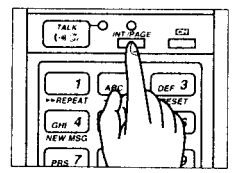
1 

The portable handset user:
Press the INT'/PAGE button.

—Both units beep while the INT'/PAGE button is pressed. When you release it, the unit automatically switches to the intercom mode. If there is no answer, press the INT'/PAGE button again to end the intercom.

2 

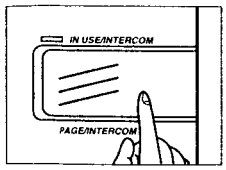
The base unit user:
When the unit beeps and the paging party's voice is heard, answer through the MIC (microphone).

3 

The portable handset user:
When the conversation is over, press the INT'/PAGE button.

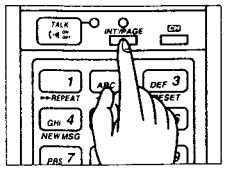
—Intercom calls can only be terminated by the portable handset.

Paging the portable handset from the base unit

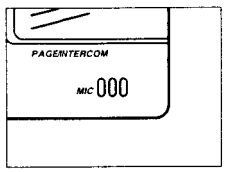
1 

The base unit user:
Press the PAGE/INTERCOM button.

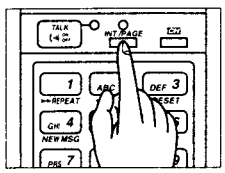
—Both units beep until the portable handset user answers the page. If there is no answer, press the PAGE/INTERCOM button again to stop paging.

2 

The portable handset user:
When the unit beeps and the INT'/PAGE indicator flashes, press the INT'/PAGE button to answer the page.

3 

The base unit user:
Speak to the paged party through the MIC.

4 

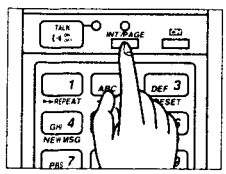
The portable handset user:
When the conversation is over, press the INT'/PAGE button.

—Intercom calls can only be terminated by the portable handset.

Transferring an incoming call using intercom

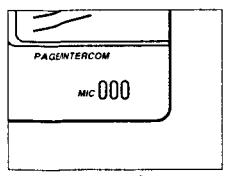
Even while in a conversation with an outside caller, intercom can be available. This feature enables you to transfer the call between the portable handset and the base unit.

Transferring from the portable handset to the base unit

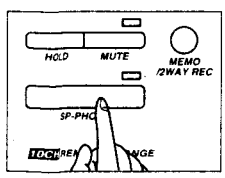
1 

The portable handset user:
During a conversation, press the INT'/PAGE button to page the base unit.

—The outside call is put on hold.

2 

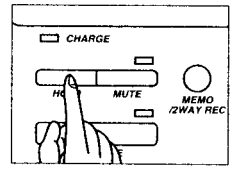
The base unit user:
When the paging party's voice is heard, answer through the MIC (microphone).

3 

To answer the outside call, press the SP-PHONE button.

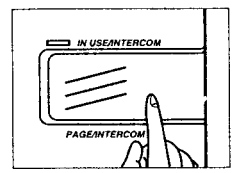
—The transfer is completed.

Transferring from the base unit to the portable handset

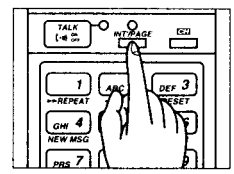
1 

The base unit user:
During a conversation, press the HOLD button to put the outside call on hold.

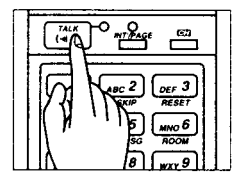
—The SP-PHONE indicator flashes.

2 

Press the PAGE/INTERCOM button to page the portable handset.

3 

The portable handset user:
Press the INT'/PAGE button to answer the paging.

4 

To answer the outside call, press the TALK button.

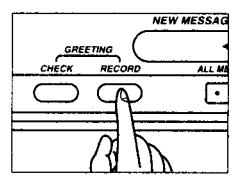
—The transfer is completed.

AUTOMATIC ANSWERING OPERATION

Recording a greeting message

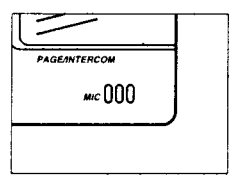
The greeting message can be recorded on the IC chip. It never be cleared even if a power failure occurs.

The recording time is up to 16 seconds.

1 

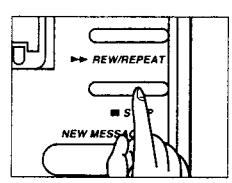
Press the GREETING RECORD button, then release it.

—A long beep sounds.

2 

Immediately after the long beep, speak clearly and loudly, 20 cm (8") away from the MIC (microphone).

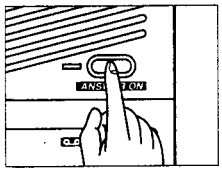
—The call counter counts the elapsed recording time.
—The IN USE ( ) indicator flashes slowly. It flashes quickly after 13 seconds.

3 

When you finished recording, press the STOP button.

Setting the unit to answer the call

Set the unit as follows to answer calls and record messages.



Press the ANSWER ON button to turn on the answering system.

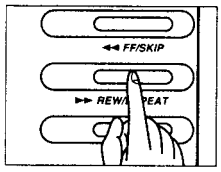
—The ANSWER ON indicator light is on and the unit is now ready to answer the call.

In case your unit is not in playback operation

—When you press the REW/REPEAT button, the unit automatically rewinds the tape to the beginning.
—When you press the FF/SKIP button, the unit automatically forwards the tape to the end of the last message.

Resetting the incoming message tape

After listening to the messages, you may reset the tape.

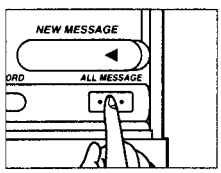


Press the REW/REPEAT button when the unit is not in playback.

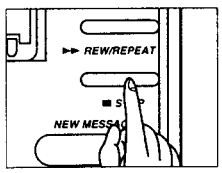
—The tape is rewound to the beginning and new messages will be recorded over the old ones.
—The call counter shows "0".

Saving specified messages

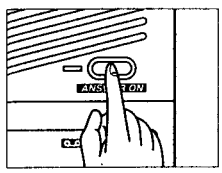
All recorded messages are saved until you reset the tape. If you want to save some messages only, do as follows.

1 

Press the ALL MESSAGE button to play back the messages.

2 

Press the STOP button at the end of the messages you want to save.

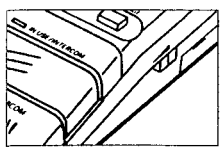
3 

Press the ANSWER ON button to turn on the answering system.

—The ANSWER ON indicator light is on.
—The new messages will be recorded after the message(s) you have saved.

MONITORING AN INCOMING CALL

While an incoming call is being recorded, you can monitor and answer it if you wish. To use this feature with the portable handset, see page 53.

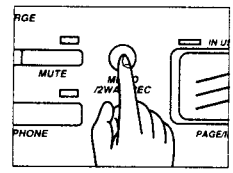


When the unit answers a call, the caller's message is heard through the speaker on the base unit.

Adjust the volume using the VOLUME control.

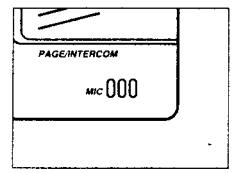
RECORDING YOUR OWN MESSAGE

You may record a personal message on the tape. It can be heard by anyone playing back messages remotely or manually.

1 

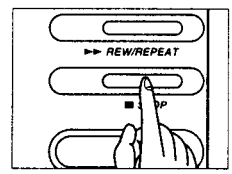
Press the MEMO/2WAY REC button.

—A long beep sounds.
—The number on the call counter increases by one.

2 

Speak after the long beep, about 20 cm (8") away from the MIC (microphone).

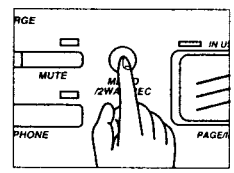
—The IN USE ( ) indicator flashes.

3 

To stop recording, press the STOP button.

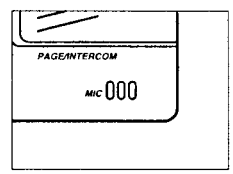
RECORDING YOUR TELEPHONE CONVERSATION

While speaking with someone with the base unit, you can record your conversation.

1 

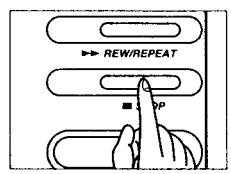
During your conversation, press the MEMO/2WAY REC button.

—A beep sounds. Then the recording starts.
—The number on the call counter increases by one.

2 

Continue your conversation through the MIC.

—The IN USE ( ) indicator flashes.

3 

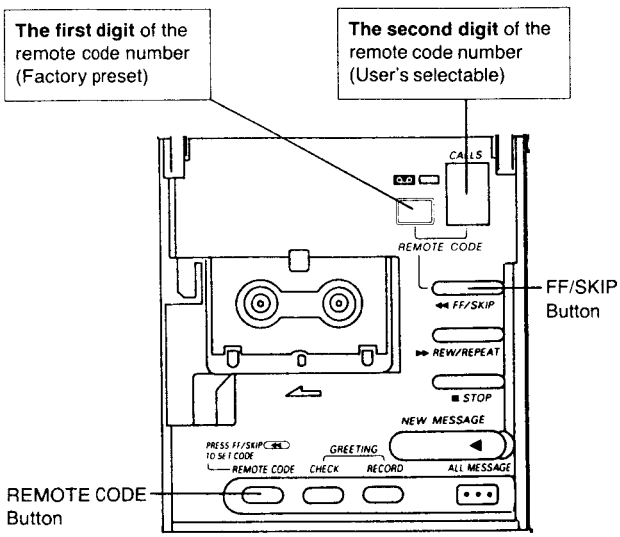
To stop recording, press the STOP button.

REMOTE OPERATION FROM A TOUCH TONE PHONE

You can operate the answering system from any touch tone phone.

Setting the remote code number

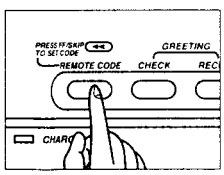
The remote code number prevents unauthorized persons from accessing your unit and listening to your messages. The number has **2 digits.**
The first digit is factory preset, and you can select the second digit ("0" through "9").



Example:
—If the factory preset number is "3", then your remote code number could be one of "30" through "39".

To select the second digit of the remote code number

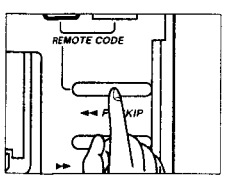
1



Press the REMOTE CODE button.

—The current number is displayed on the call counter.
—A flashing dot below the number shows the unit is in the programming mode.

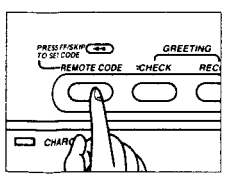
2



Press the FF/SKIP button repeatedly to select the number.

—The displayed number is stored as the second digit of the remote code number.

3



When you finished, press the REMOTE CODE button.

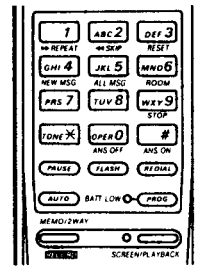
—The call counter returns to the number of messages.

Note:
—If you do not press any button over 10 seconds on step 1 or 2, the call counter automatically returns to the number of messages.

To check the stored number

Press the REMOTE CODE button.
The second digit of the remote code number is displayed on the call counter. After confirmation, press the REMOTE CODE button again.

OPERATION FROM PORTABLE HANDSET



If the SCREEN/PLAYBACK indicator flashes when you press the SCREEN/PLAYBACK button, the answering system is off. To set the unit to answer calls, press #.

Press the SCREEN/PLAYBACK button.
↓
Press your desired dial button.
—**To play back all messages**, press 5.
—**To play back new messages**, press 4.
—**To repeat**, press 1.
—**To skip**, press 2.
—**To reset the tape after playback**, press 3.
↓
Press the SCREEN/PLAYBACK button to end the operation.

Press the SCREEN/PLAYBACK button.
↓
Press your desired dial button.
—**To monitor the room sound**, press 6.
—**To turn off the answering system**, press 0.
↓
Press the SCREEN/PLAYBACK button to end the operation.

To monitor an incoming call:

When the SCREEN/PLAYBACK indicator flashes slowly, press the SCREEN/PLAYBACK button. When finished, press the button again.

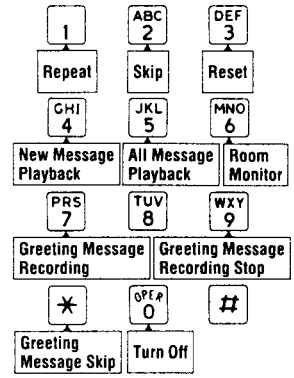
To record your own message:

1. Press the MEMO/2WAY RECORD button.
2. Speak into your portable handset after the long beep.
3. Press the MEMO/2WAY RECORD button to stop recording.

To record your telephone conversation:

1. Press the MEMO/2WAY RECORD button.
2. Continue your conversation.
3. Press the MEMO/2WAY RECORD button to stop recording.

OPERATION FROM TONE PHONE



Call your unit.
↓
Press remote code no. _____
↓
—**To play back all messages**, press 5.
—**To play back new messages**, press 4.
—**To repeat**, press 1.
—**To skip**, press 2.
—**To reset the tape after playback**, press 3.
—**To record your own message**, speak after hearing 2 beeps at the end of playback.
—**To save the messages**, hang up after playback.

When you press a button, press firmly.

Call your unit. → **To skip greeting message**, press *.
↓
Press remote code no. _____ → **To turn off the answering system**, Press 0, then hang up.
↓
To re-record greeting message
1. Press 7 to re-record the greeting message.
2. Speak after a long beep.
   —The recording time is up to 16 seconds.
3. When finished, press 9.

→ **To monitor room sound**, press 6.

To turn on the answering system, call your unit and wait for 15 rings. The unit will answer, then hang up.

ADJUSTMENTS (KX-T4330H)

If your unit have below symptom, adjust for each item following table of adjustment.

Symptom	Remedy
The base unit does not receive a call from portable handset.	Adjust the adjustment item (A)
The base unit does not transmit, and the transmit frequency is slipped.	Adjust the adjustment item (B)
The transmit frequency is slipped.	Adjust the adjustment item (C)
The transmit output is low, and the arrival distance is shorted between base unit and portable handset.	Adjust the adjustment item (D)
The reception sensitivity of base unit is wrong, the noise is occurred.	Adjust the adjustment item (E)

Unit condition:

1. Remove the antenna lead wire from P.C. Board of the base unit.
2. Connect the AC adaptor (KX-A11-W-5) plug into DC IN jack and the other end into a power outlet (AC 120 V, 60 Hz).

How to set the test mode:

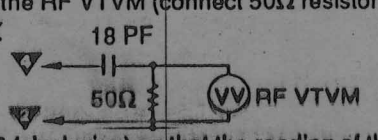
Test Mode Switch		Test Mode
S9	S10	
ON	OFF	CH10 Stand-By
ON	Once ON	CH10 Intercom
ON	Twice ON	CH10 Talk

Power/Ringer Switch OFF: Test Mode Release

Power Ringer Switch ON

1. When adjusting KX-T4330H, make sure that one set the test mode of CH10 talk.
2. Connect the test mode switch S9 and S10 to KX-T4330H as shown in Fig. 12.
3. Set the S9 to ON.
4. Press the S10 twice.
5. The KX-T4330H becomes the test mode of CH10 talk, and adjust as shown below table.
6. After adjusting, remove the S9 and S10.

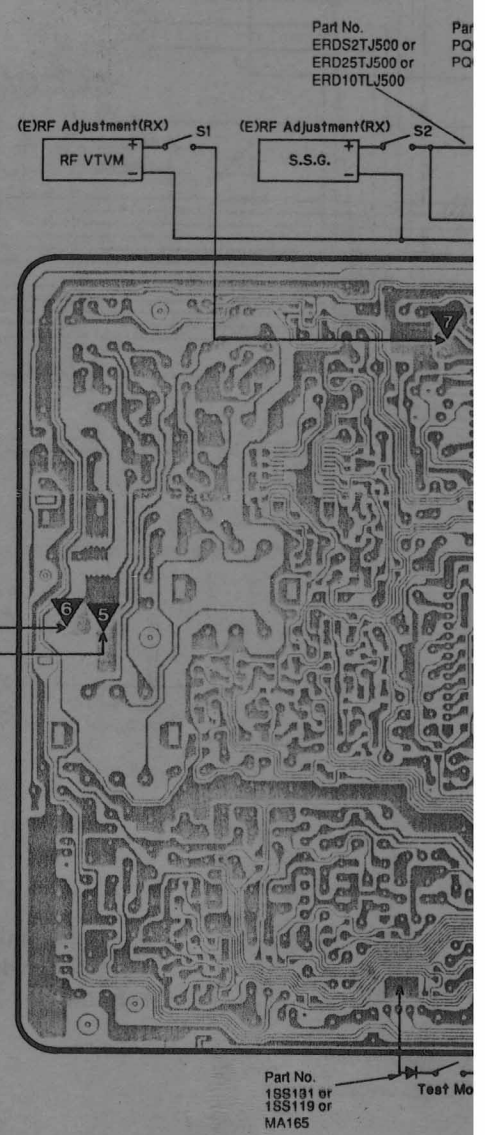
When replacing these parts, adjust as shown below table.

Replace Parts	Adjustment Items	Test Mode	Adjustment Points	Procedure
IC1, L3	(A) Phase Detector Voltage Adjustment (RX)	CH10 Talk	L3	1. Connect the Digital Voltmeter to ⑦–⑨. 2. Adjust L3 (counterclockwise) so that the reading of the Digital Voltmeter is 3.2 V±0.15 V.
D2, D3, T7	(B) Phase Detector Voltage Adjustment (TX)	CH10 Talk	T7	1. Connect the Digital Voltmeter to ⑨–⑦. 2. Adjust T7 (counterclockwise) so that the reading of the Digital Voltmeter is 3.2 V±0.15 V.
T6, T8, VC1, X1	(C) Frequency Adjustment (TX)	CH10 Talk	T6, T8 VC1	1. Connect the RF VFVM to ⑨–⑦. 2. Adjust T6 and T8 for maximum output on RF VTVM. 3. Connect the frequency counter to ⑨–⑦. 4. Adjust VC1 so that the reading of the frequency counter is 46.970 MHz±200 Hz.
T8, Q11	(D) Power Adjustment (TX)	CH10 Talk	T8	1. Connect the RF VTVM (connect 50Ω resistor) to ⑨–⑦.  2. Adjust T8 (clockwise) so that the reading of the RF VTVM is 85 mV±15 mV.

When replacing these parts, adjust as shown b

Replace Parts	Adjustment Items	Test Mode
T1, T2, T3, T4, T5, Q1	(E) RF Adjustment (RX)	CH10 Talk

Flow

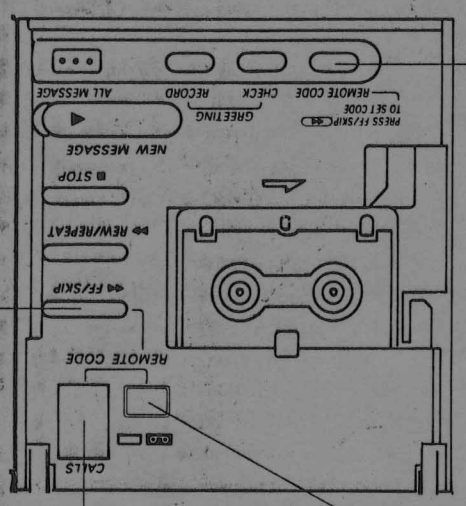


Setting the remote code number

The remote code number prevents unauthorized persons from accessing your unit and listening to your messages. The number has **2 digits**. **The first digit is factory preset, and you can select the second digit** ("0" through "9"). When setting the second digit, refer to page 10 in this service manual.

The first digit of the remote code number (Factory preset)

The second digit of the remote code number (User's selectable)



FF/SKIP Button

REMOTE CODE Button

	N	M	L	K
0	×	×	×	×
1	×	×	×	○
2	×	×	○	×
3	×	×	○	○
4	×	○	×	×
5	×	○	×	○
6	×	○	○	×
7	×	○	○	○
8	○	×	×	×
9	○	×	×	○
C	○	×	○	×
1	○	×	○	○
2	○	○	×	×
3	○	○	×	○
4	○	○	○	×
5	○	○	○	○

○: Short the diodes.
×: Open the diodes.

Refer to page 14.

Example:
—If the factory preset number is "3", then your remote code number could be one of "30" through "39".

X-T4330H)

g table of adjustment.

	Remedy
	Adjust the adjustment item (A)
	Adjust the adjustment item (B)
	Adjust the adjustment item (C)
	Adjust the adjustment item (D)
.	Adjust the adjustment item (E)

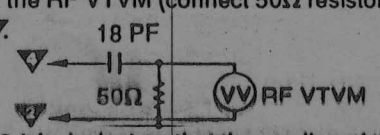
When replacing these parts, adjust as shown below table.

Replace Parts	Adjustment Items	Test Mode	Adjustment Points	Procedure
T1, T2, T3, T4, T5, Q1	(E) RF Adjustment (RX)	CH10 Talk	T5	1. Connect S.S.G. to ▽5–▽3. 2. Connect the loop simulator and AF VTVM to ▽5–▽6. Connect the RF VTVM to ▽7-Ground. 3. Apply a 60 dBμV output from S.S.G. (modulation frequency 1 kHz, dev. 3 kHz). 4. Apply a DC 48 V from loop simulator. 5. Adjust **T5** so that the reading of the AF VTVM is maximum output.
			T1, T2, T3, T4	6. Apply a 30 dBμV output from S.S.G. (modulation frequency 1 kHz, dev. 3 kHz), and adjust **T1**, **T2**, **T3** and **T4** (in that order) so that reading of the RF VTVM is maximum output.

other end into a power outlet (AC 120 V, 60 Hz).

djusting KX-T4330H, make sure that one set the test CH10 talk.
the test mode switch S9 and S10 to KX-T4330H as Fig. 12.
S9 to ON.
e S10 twice.
T4330H becomes the test mode of CH10 talk, and shown below table.
usting, remove the S9 and S10.

er Switch ON

	Procedure
	1. Connect the Digital Voltmeter to ▽7–▽3. 2. Adjust **L3** (counterclockwise) so that the reading of the Digital Voltmeter is 3.2 V±0.15 V.
	1. Connect the Digital Voltmeter to ▽7–▽3. 2. Adjust **T7** (counterclockwise) so that the reading of the Digital Voltmeter is 3.2 V±0.15 V.
	1. Connect the RF VFVM to ▽7–▽3. 2. Adjust **T6** and **T8** for maximum output on RF VTVM. 3. Connect the frequency counter to ▽4–▽3. 4. Adjust **VC1** so that the reading of the frequency counter is 46.970 MHz±200 Hz.
	1. Connect the RF VTVM (connect 50Ω resistor) to ▽7–▽3.  2. Adjust **T8** (clockwise) so that the reading of the RF VTVM is 85 mV±15 mV.

Flow Solder Side View

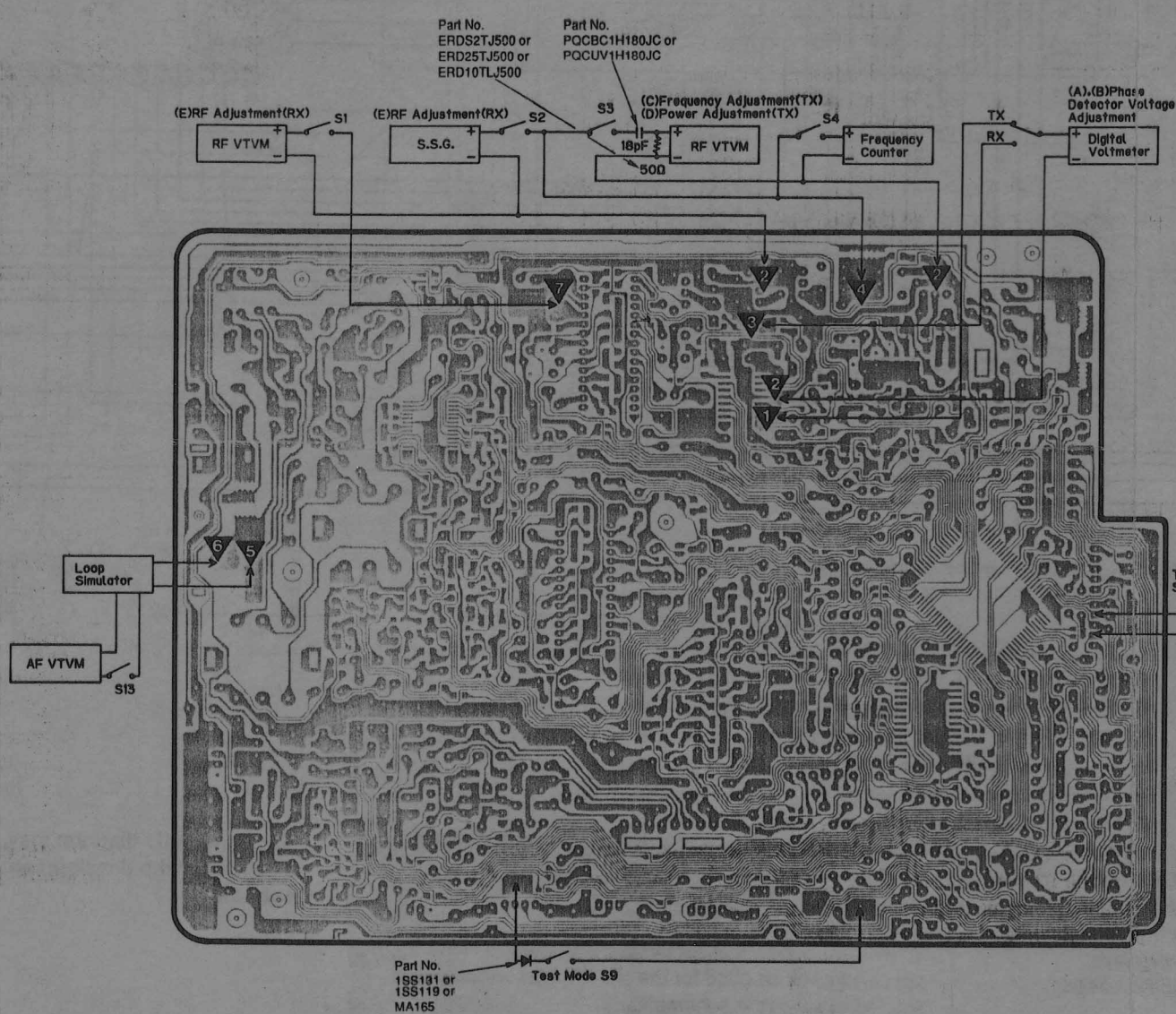


Fig. 12

S AND DIODES (KX-T4330H)

Settir

The rem

X-T4330H)

table of adjustment.

Remedy

Adjust the adjustment item (A)
Adjust the adjustment item (B)
Adjust the adjustment item (C)
Adjust the adjustment item (D)
Adjust the adjustment item (E)

When replacing these parts, adjust as shown below table.

Replace Parts	Adjustment Items	Test Mode	Adjustment Points	Procedure
T1, T2, T3, T4, T5, Q1	(E) RF Adjustment (RX)	CH10 Talk	T5	1. Connect S.S.G. to ▽5–▽3. 2. Connect the loop simulator and AF VTVM to ▽5–▽6. Connect the RF VTVM to ▽7-Ground. 3. Apply a 60 dBμV output from S.S.G. (modulation frequency 1 kHz, dev. 3 kHz). 4. Apply a DC 48 V from loop simulator. 5. Adjust **T5** so that the reading of the AF VTVM is maximum output.
			T1, T2, T3, T4	6. Apply a 30 dBμV output from S.S.G. (modulation frequency 1 kHz, dev. 3 kHz), and adjust **T1**, **T2**, **T3** and **T4** (in that order) so that reading of the RF VTVM is maximum output.

other end into a power outlet (AC 120 V, 60 Hz).

djusting KX-T4330H, make sure that one set the test CH10 talk.
the test mode switch S9 and S10 to KX-T4330H as Fig. 12.
S9 to ON.
e S10 twice.
T4330H becomes the test mode of CH10 talk, and shown below table.
usting, remove the S9 and S10.

er Switch ON

Procedure

1. Connect the Digital Voltmeter to ▽7–▽3.
2. Adjust **L3** (counterclockwise) so that the reading of the Digital Voltmeter is 3.2 V±0.15 V.

1. Connect the Digital Voltmeter to ▽7–▽3.
2. Adjust **T7** (counterclockwise) so that the reading of the Digital Voltmeter is 3.2 V±0.15 V.

1. Connect the RF VFVM to ▽7–▽3.
2. Adjust **T6** and **T8** for maximum output on RF VTVM.
3. Connect the frequency counter to ▽4–▽3.
4. Adjust **VC1** so that the reading of the frequency counter is 46.970 MHz±200 Hz.

1. Connect the RF VTVM (connect 50Ω resistor) to ▽7–▽3.

2. Adjust **T8** (clockwise) so that the reading of the RF VTVM is 85 mV±15 mV.

Fig. 12

Refer to page 14.
O: Short the diodes.
X: Open the diodes.

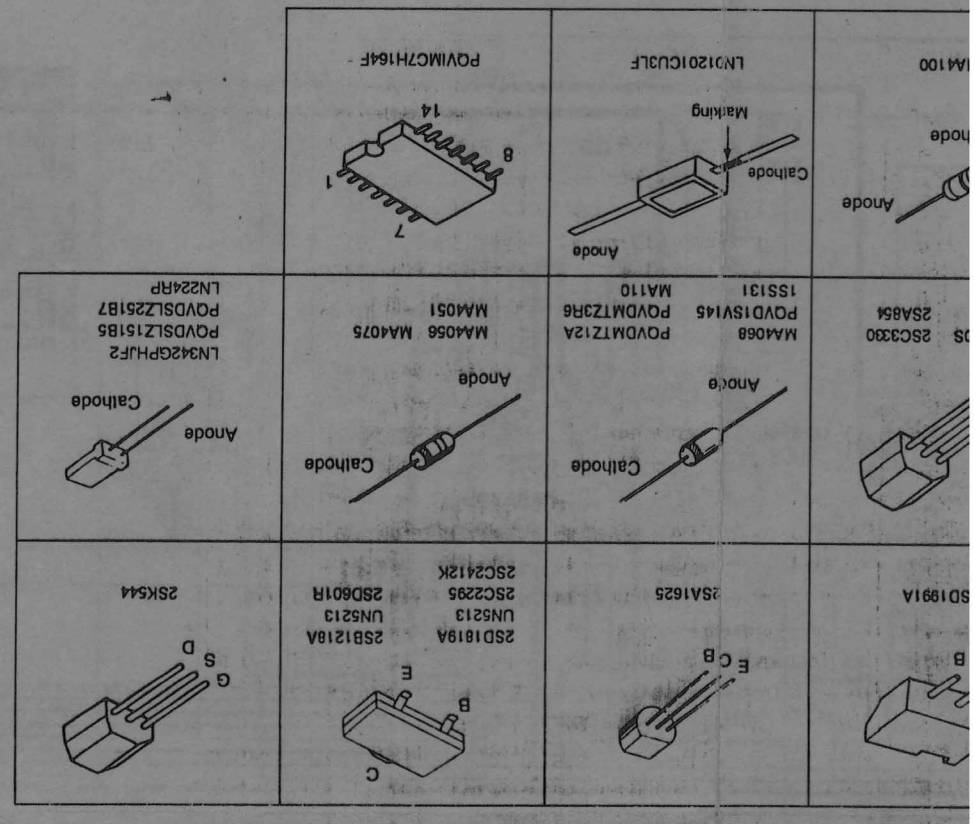
	N	M	L	K
C	X	X	X	X
1	X	X	X	O
2	X	X	O	X
3	X	X	O	O
4	X	O	X	X
5	X	O	X	O
6	X	O	O	X
7	X	O	O	O
8	O	X	X	X
9	O	X	X	O
C	O	X	O	X
1	O	X	O	O
2	O	O	X	X
3	O	O	X	O
4	O	O	O	X
5	O	O	O	O

REMOTE
Button

Example
—If the f
could t

The rem
your unit
The firs
("0" thro
service

The fir
remote
(Factor

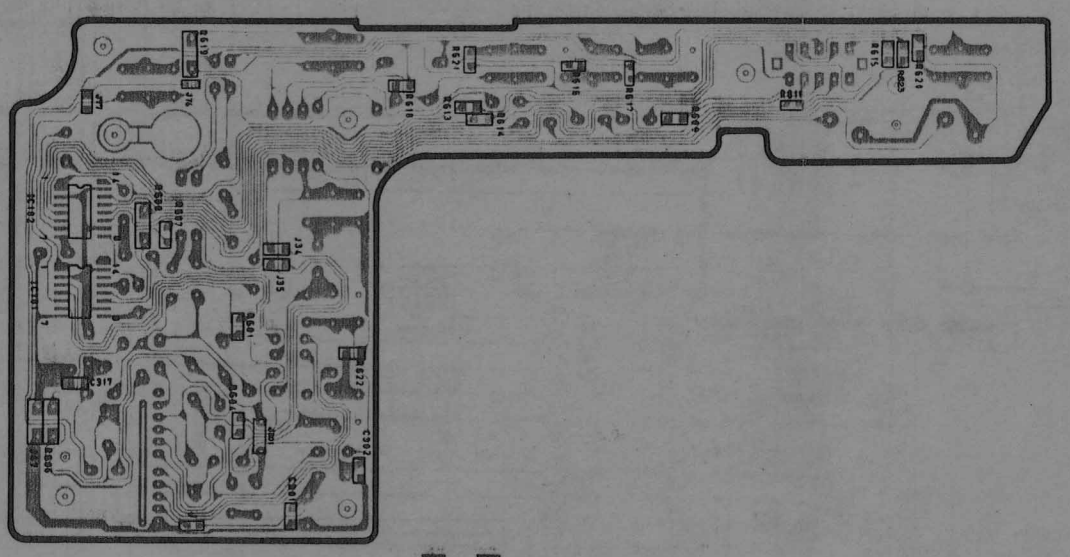


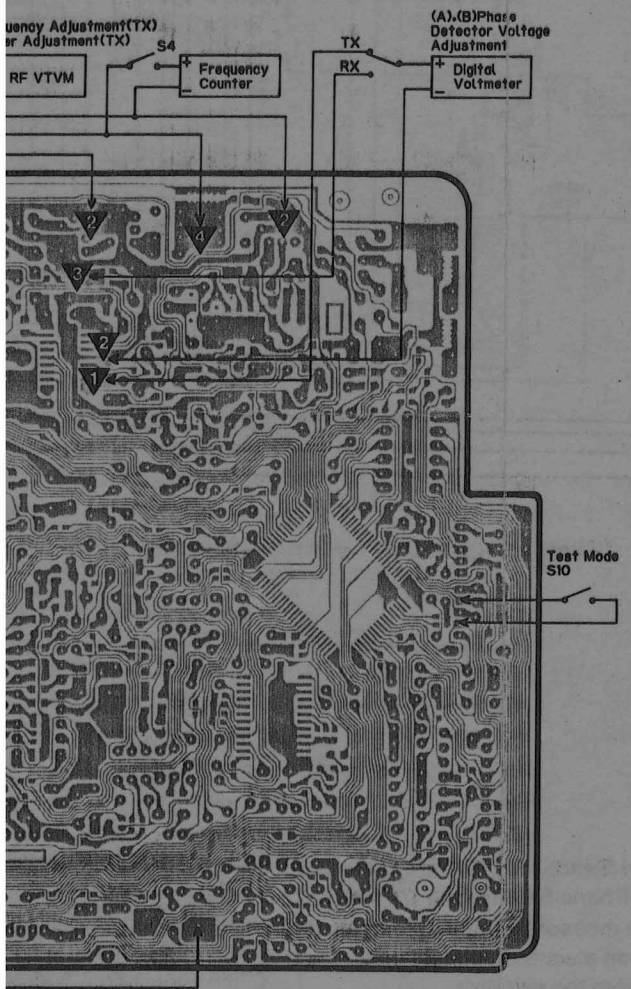
TERMINAL GUIDE OF ICs, TRANSISTORS AND DIODES (KX-T4330H)

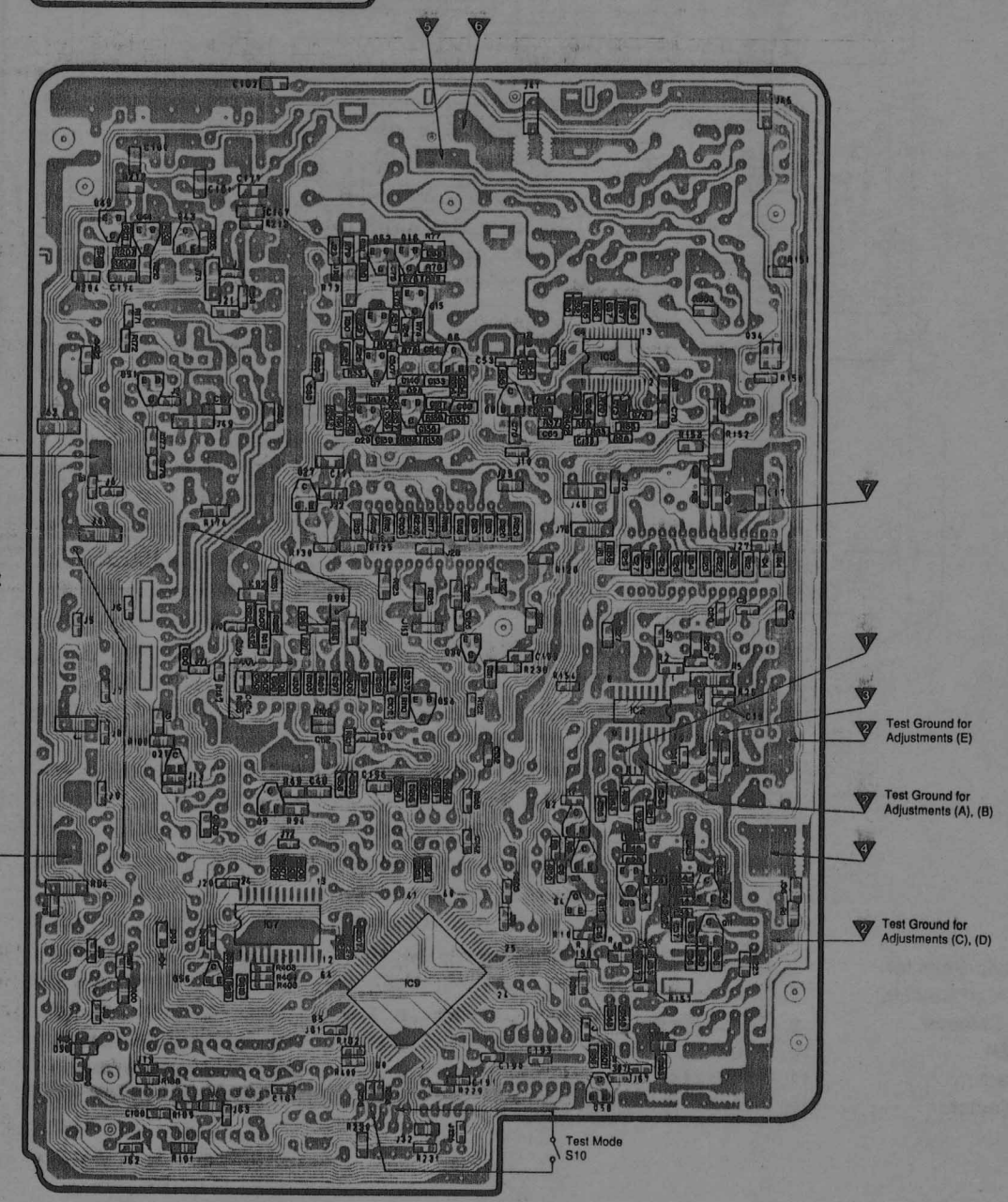
PQVIBA6220	PQVIMC4094BF PQV13710041FT	PQVIBA6218	AN6169K	2SD1991A	2SA1625	2SD1819A 2SB1218A UN5213 UN5213 2SC2295 2SD601R 2SC2412K
PQVITAD01GM1	XN2215	PQVIMT8870CE	PQVISC77655S	2SC1740S 2SC3330 2SA933 2SA854	MA4068 PQVDMTZ12A PQVD1SV145 PQVDMTZ3R6 1SS131 MA110	MA4056 MA4075 MA4051
PQVISC79132P	PQV14639A16F	AN6165SB	2SD2137	MA4100	LN1201CU3LF	PQVIMC7H164F

CIRCUIT BOARD (KX-T4330H)

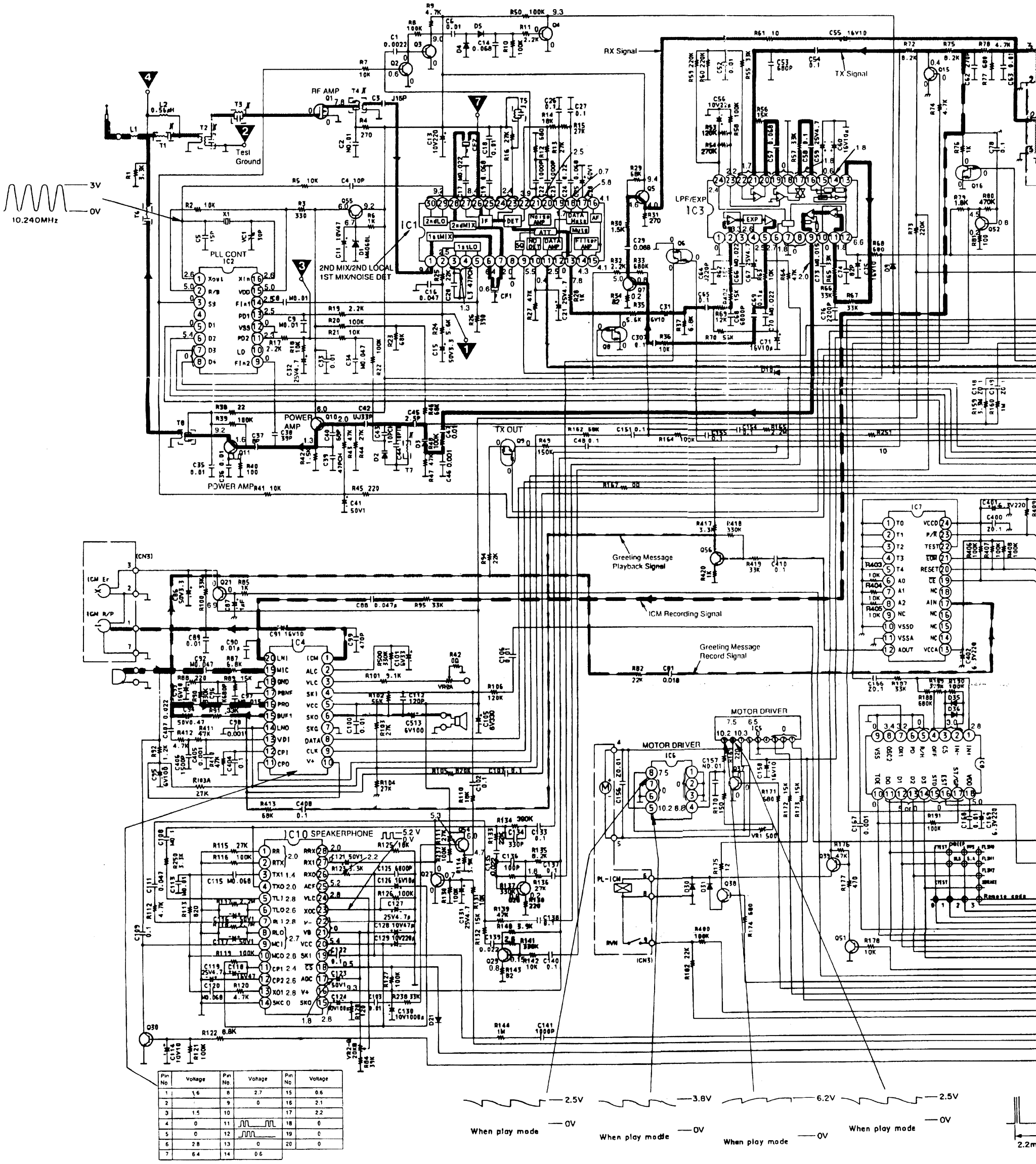
(Flow Solder Side View)







SCHEMATIC DIAGRAM (KX-T4

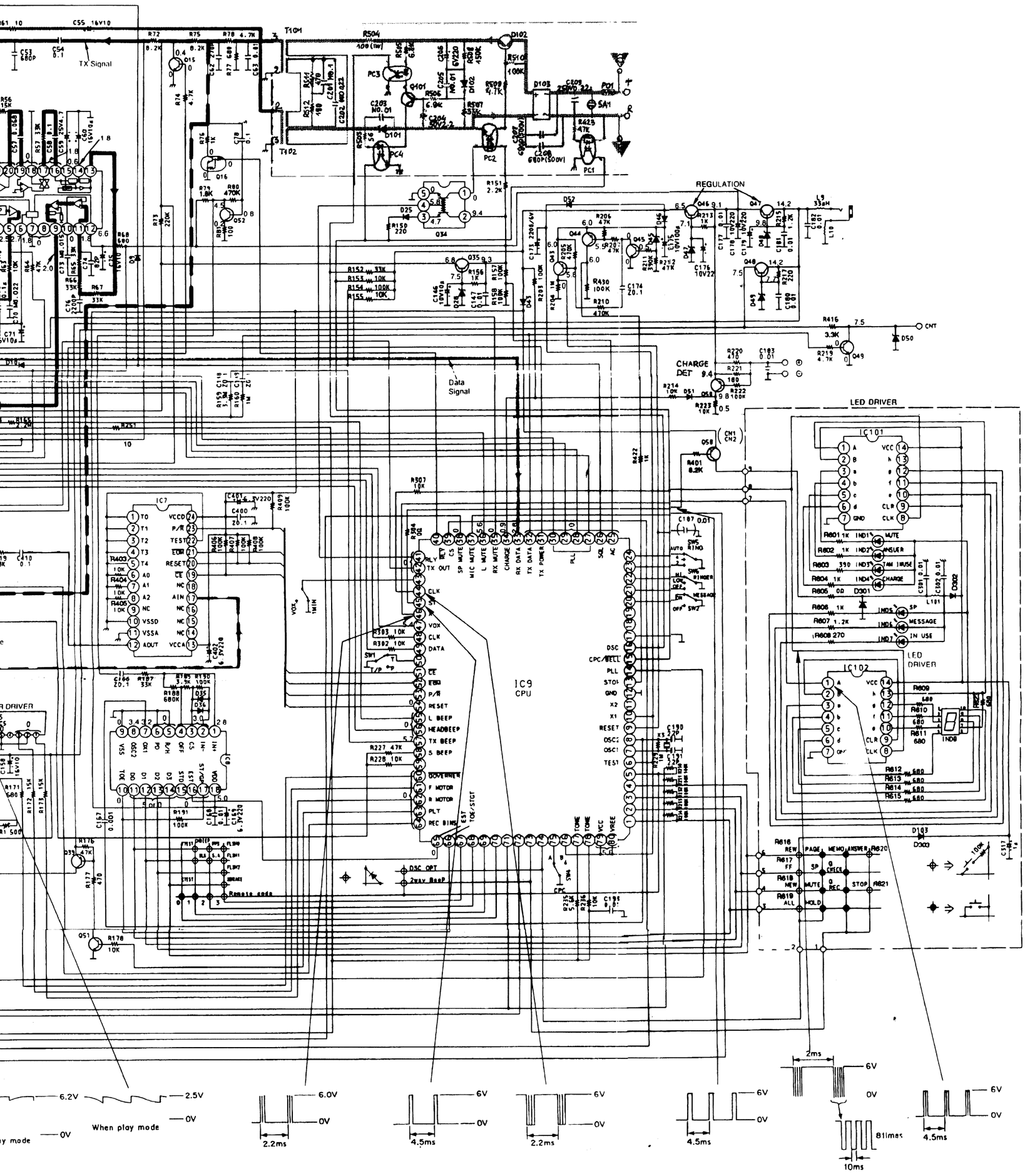


Pin No	Voltage	Pin No.	Voltage	Pin No	Voltage
1	1.6	8	2.7	15	0.6
2		9	0	16	2.1
3	1.5	10		17	2.2
4	0	11		18	0
5	0	12		19	0
6	2.8	13	0	20	0
7	6.4	14	0.6		

Notes:

1. SW1: Dialing Mode Selector.
2. SW2: Message Alert Selector.
3. SW3: Rec Time Selector.
4. SW4: CPC Switch.
5. SW5: Rings Selector.
6. SW6: Ringer Selector.
7. S101: Answering On Switch.
8. S102: Fast Forward Switch.
9. S103: Rewind Switch.
10. S104: Stop Switch.
11. S105: New Message Switch.
12. S106: All Message Switch.
13. S107: Greeting Record Switch.
14. S108: Greeting Check Switch.
15. S109: Remote Code Switch.
16. S110: Page/Intercom Switch.
17. S111: Memo/2 Way Rec Switch.
18. S112: Mute Switch.
19. S113: Hold Switch.
20. S114: SP-Phone Switch.
21. DC voltage measurements are taken with an electronic voltmeter from the negative voltage line. STANDBY position.

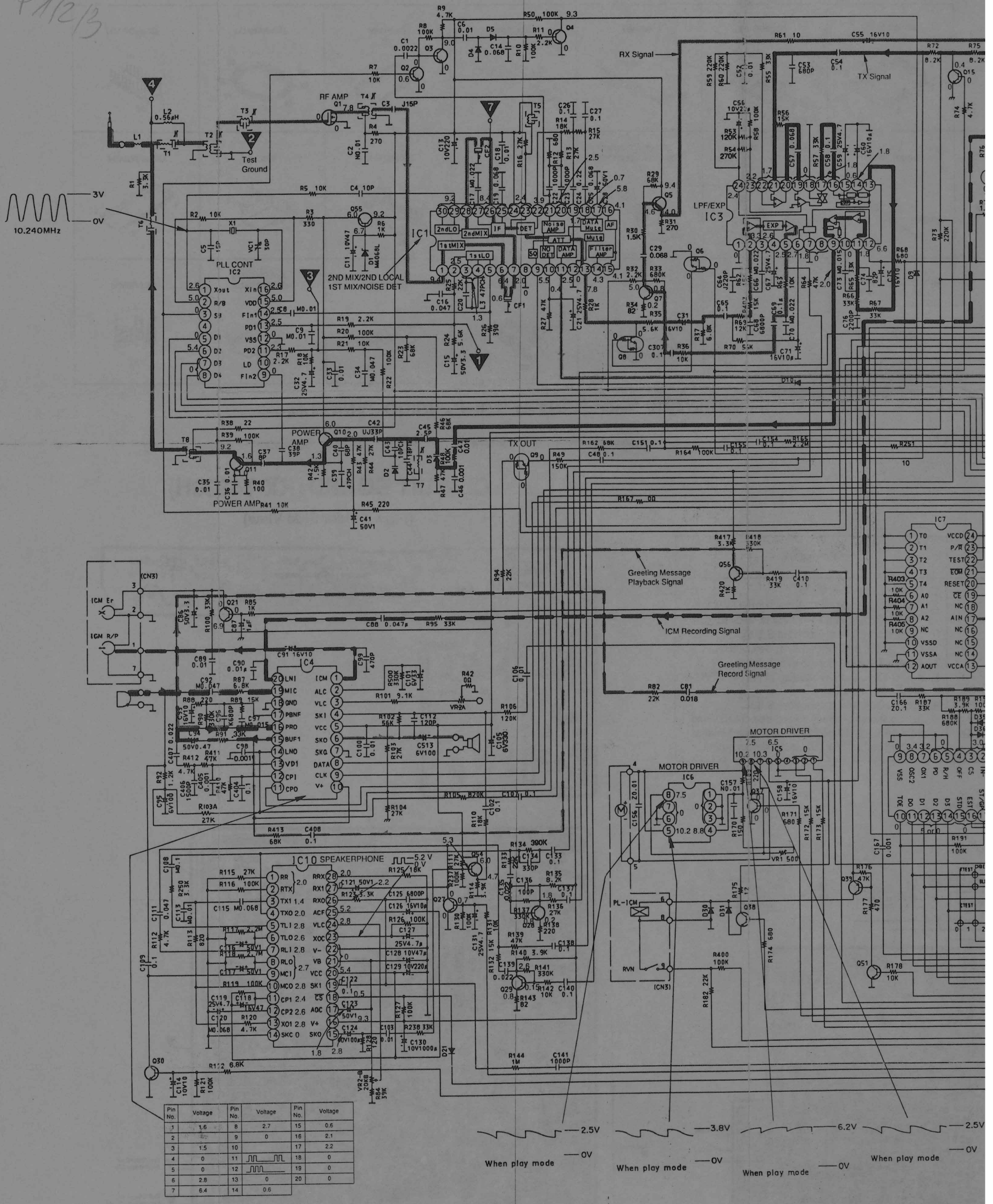
HEMATIC DIAGRAM (KX-T4330H)



This schematic diagram may be modified at any time with development of new technology.

SCHEMATIC DIAGRAM

P112B



Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage
1	1.6	8	2.7	15	0.6
2		9	0	16	2.1
3	1.5	10		17	2.2
4	0	11		18	0
5	0	12		19	0
6	2.8	13	0	20	0
7	6.4	14	0.6		

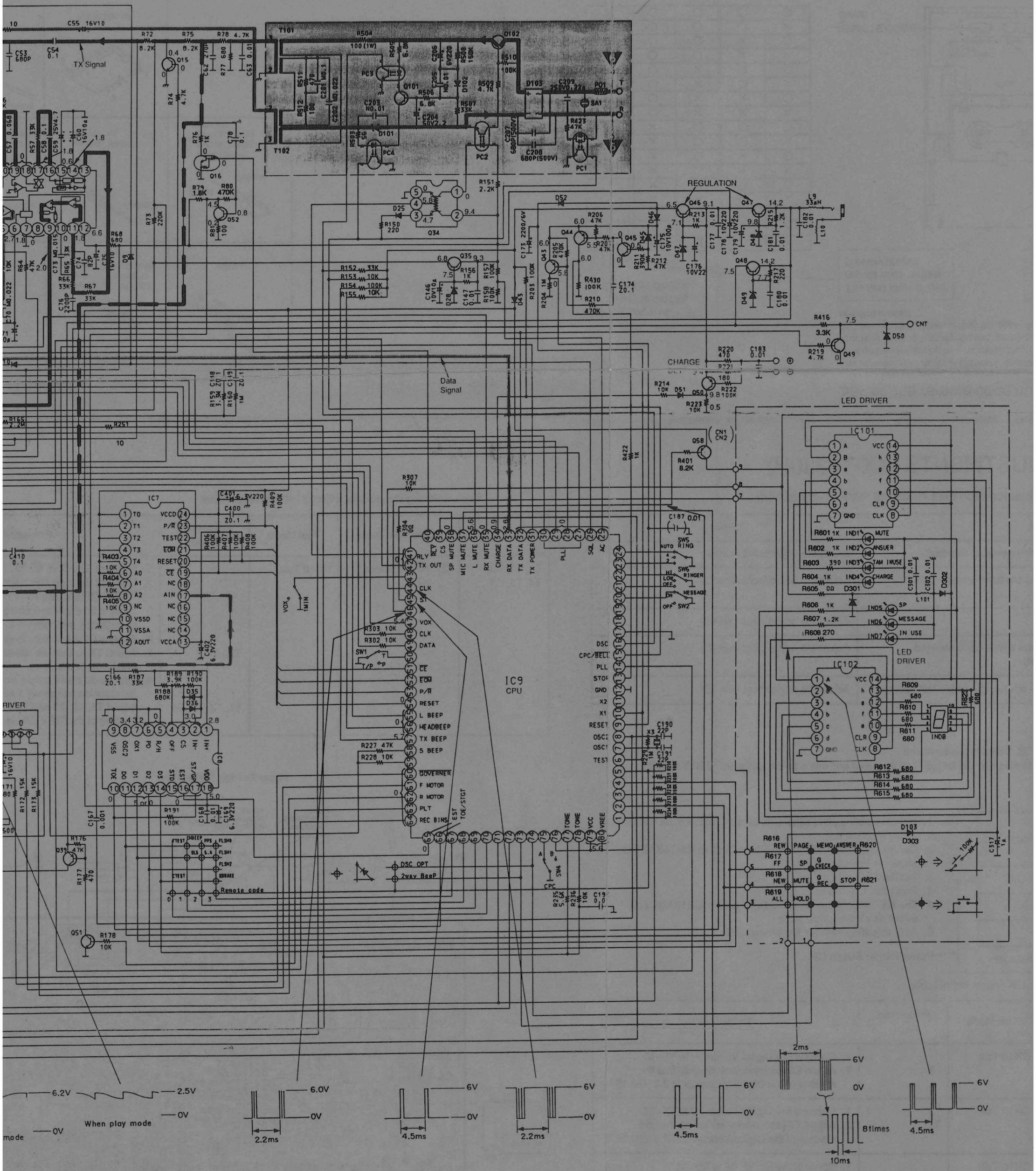
Notes:

1. SW1: Dialing Mode Selector.
2. SW2: Message Alert Selector.
3. SW3: Rec Time Selector.
4. SW4: CPC Switch.
5. SW5: Rings Selector.
6. SW6: Ringer Selector.
7. S101: Answering On Switch.
8. S102: Fast Forward Switch.
9. S103: Rewind Switch.
10. S104: Stop Switch.
11. S105: New Message Switch.
12. S106: All Message Switch.
13. S107: Greeting Record Switch.
14. S108: Greeting Check Switch.
15. S109: Remote Code Switch.
16. S110: Page/Intercom Switch.
17. S111: Memo/2 Way Rec Switch.
18. S112: Mute Switch.
19. S113: Hold Switch.
20. S114: SP-Phone Switch.
21. DC voltage measurements are taken with an electronic voltmeter from the negative voltage line. STANDBY position.

Important Safety Noti

The shaded area on this incorporates special feat from fire and electrical sh When servicing, it is esse specified parts be used f shaded areas of the sche

EMATIC DIAGRAM (KX-T4330H)



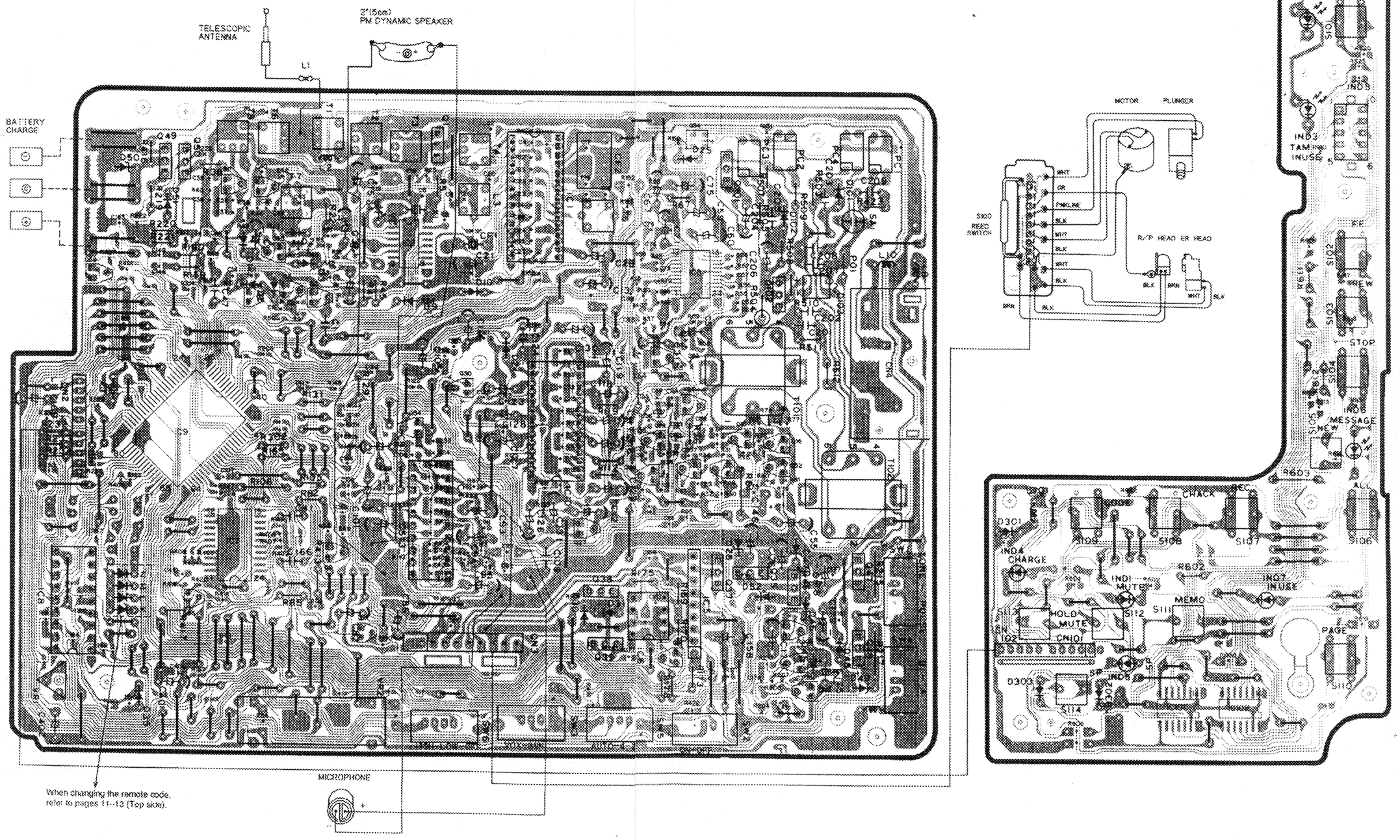
Important Safety Notice

The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards.
When servicing, it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

This schematic diagram may be modified at any time with development of new technology.

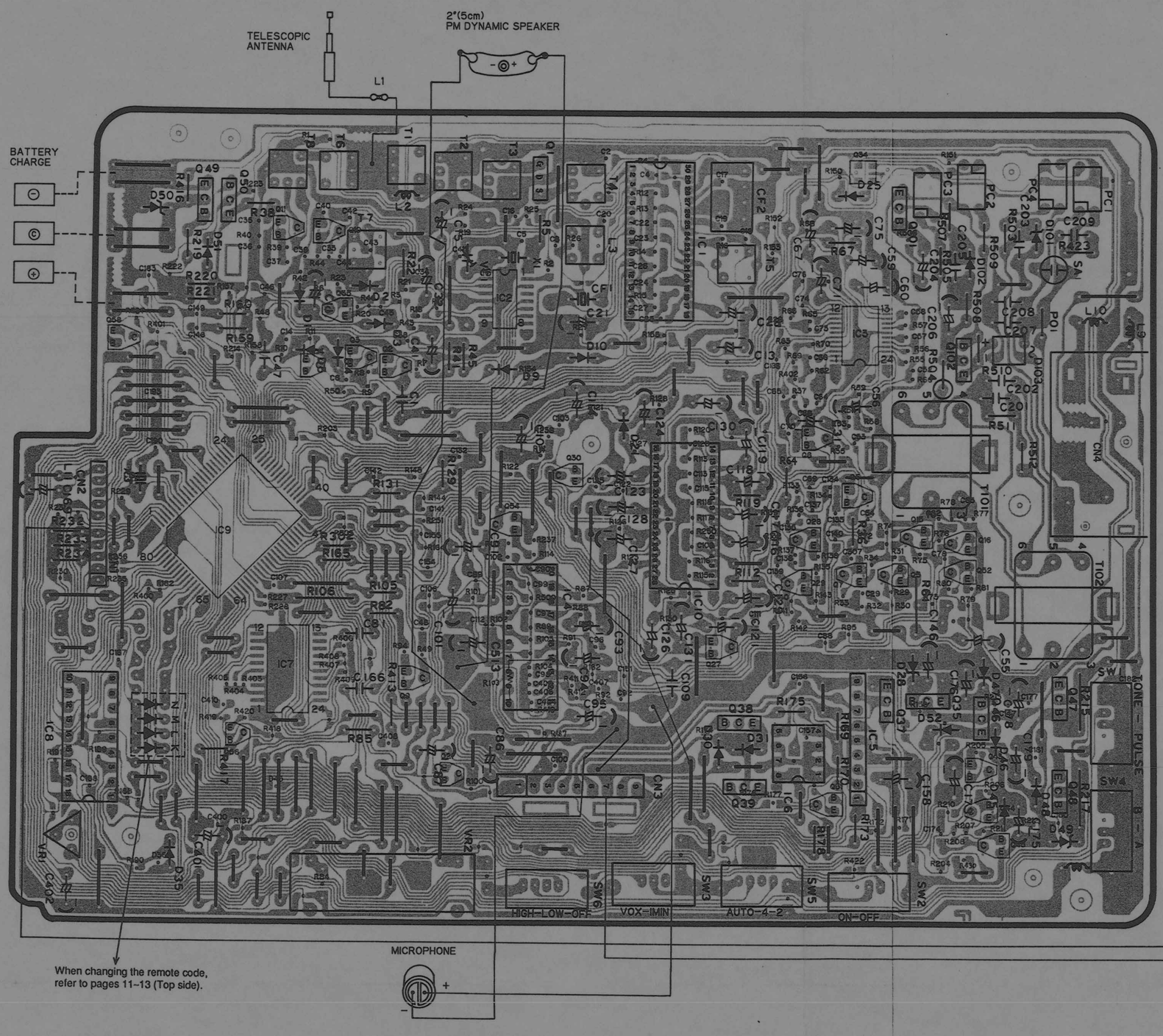
CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (KX-T4330H)

(Component View: Including Flow Solder Side Parts)

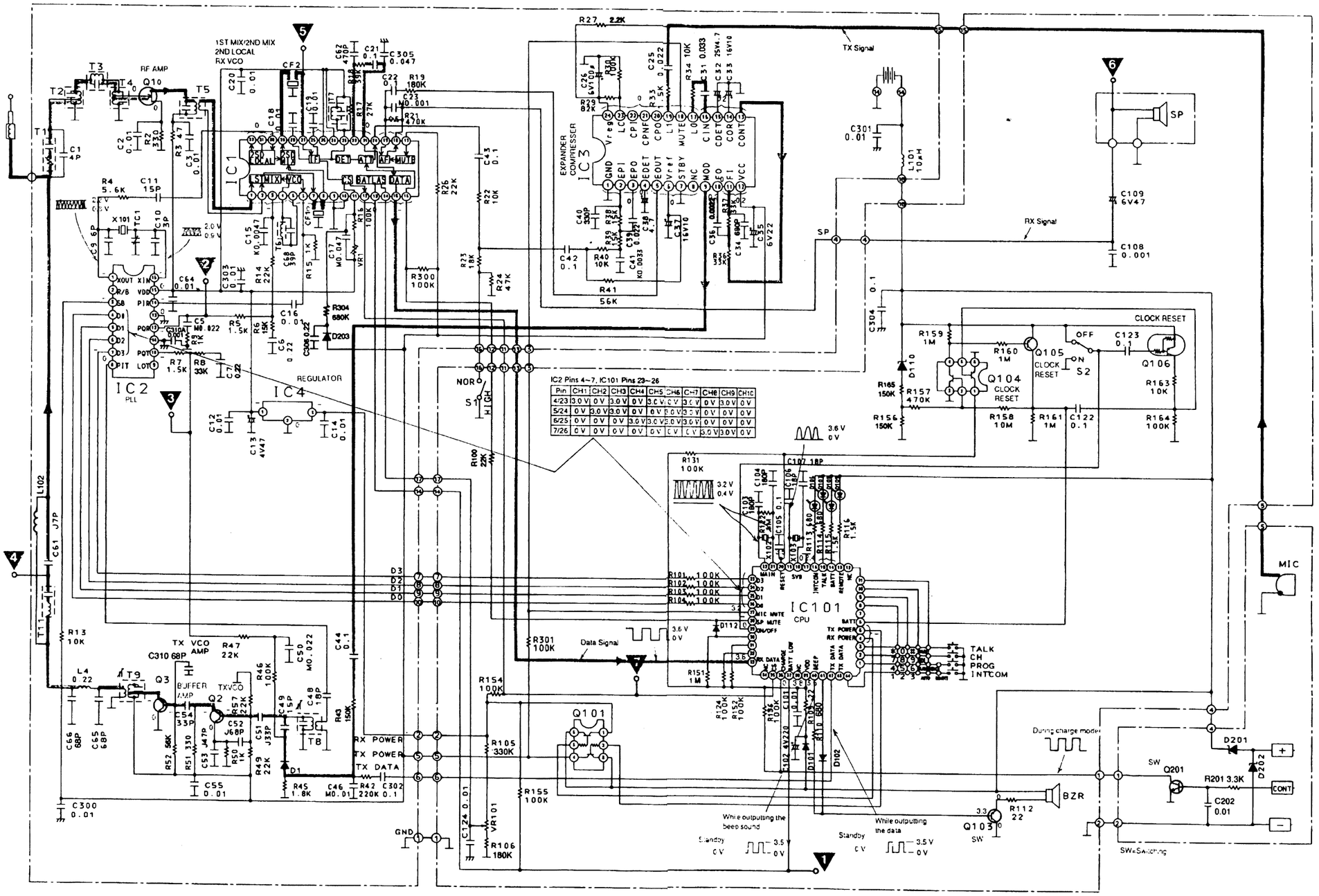


CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (KX-T4330H)

(Component View: Including Flow Solder Side Parts)



SCHEMATIC DIAGRAM (KX-T4330R)



IC2 Pins 4~7, IC101 Pins 23~26

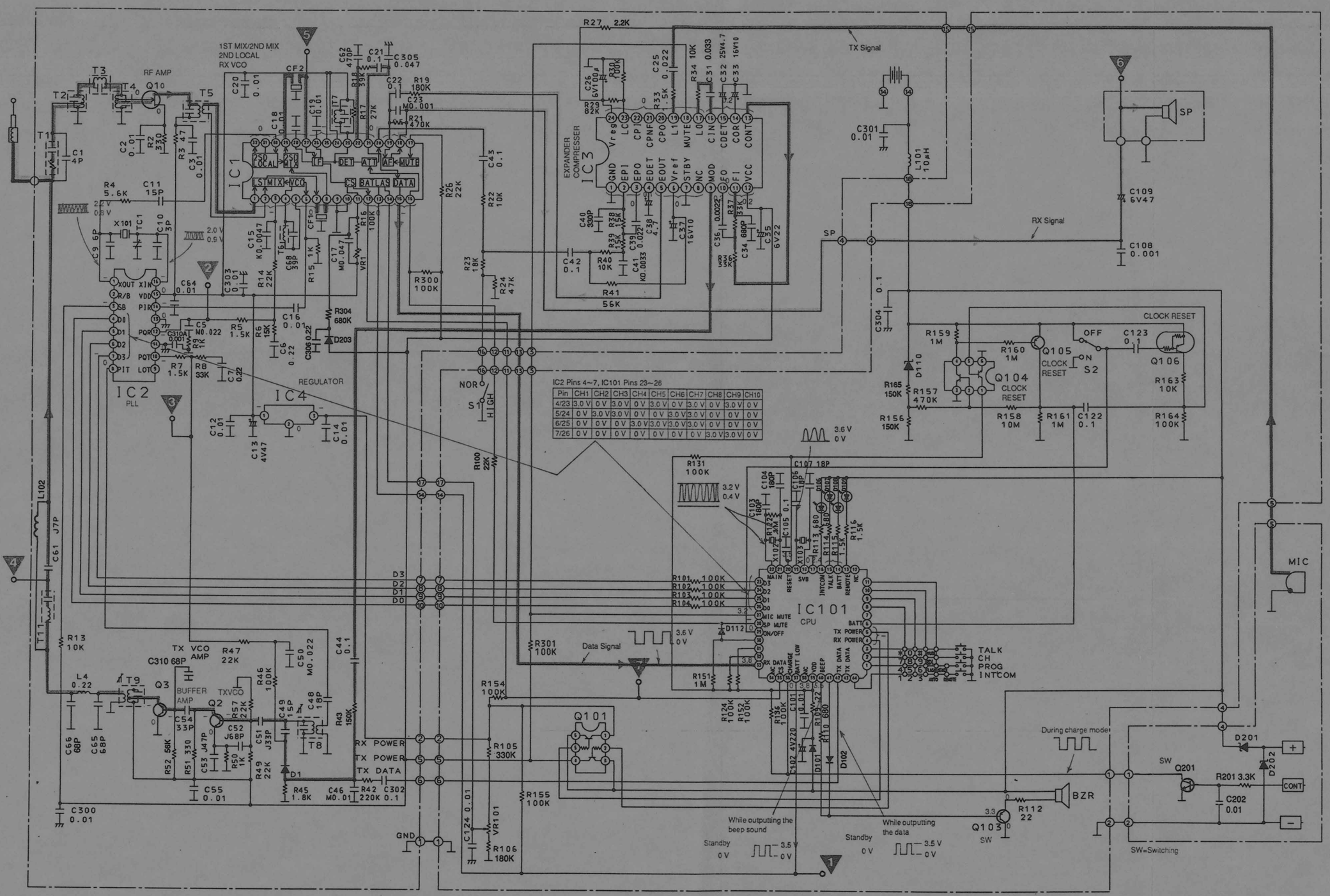
Pin	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10
4/23	3.0 V	0 V	3.0 V	0 V	3.0 V	0 V	3.0 V	0 V	3.0 V	0 V
5/24	0 V	3.0 V	3.0 V	0 V	0 V	3.0 V	3.0 V	0 V	0 V	0 V
6/25	0 V	0 V	0 V	3.0 V	3.0 V	3.0 V	3.0 V	0 V	0 V	0 V
7/26	0 V	0 V	0 V	0 V	0 V	0 V	3.0 V	3.0 V	3.0 V	0 V

Notes:

1. S1: Volume Selector Switch in "HIGH" position.
2. S2: Power/Ringer switch in "OFF" position.
3. DC voltage measurements are taken with electronic voltmeter from negative voltage line. STANDBY position.

This schematic diagram may be modified at any time with the development of new technology.

SCHEMATIC DIAGRAM (KX-T4330R)



IC2 Pins 4~7, IC101 Pins 23~26

Pin	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10
4/23	3.0 V	0 V	3.0 V	0 V	3.0 V	0 V	3.0 V	0 V	3.0 V	0 V
5/24	0 V	3.0 V	3.0 V	0 V	0 V	3.0 V	3.0 V	0 V	0 V	0 V
6/25	0 V	0 V	0 V	3.0 V	3.0 V	3.0 V	3.0 V	0 V	0 V	0 V
7/26	0 V	0 V	0 V	0 V	0 V	0 V	0 V	3.0 V	3.0 V	0 V

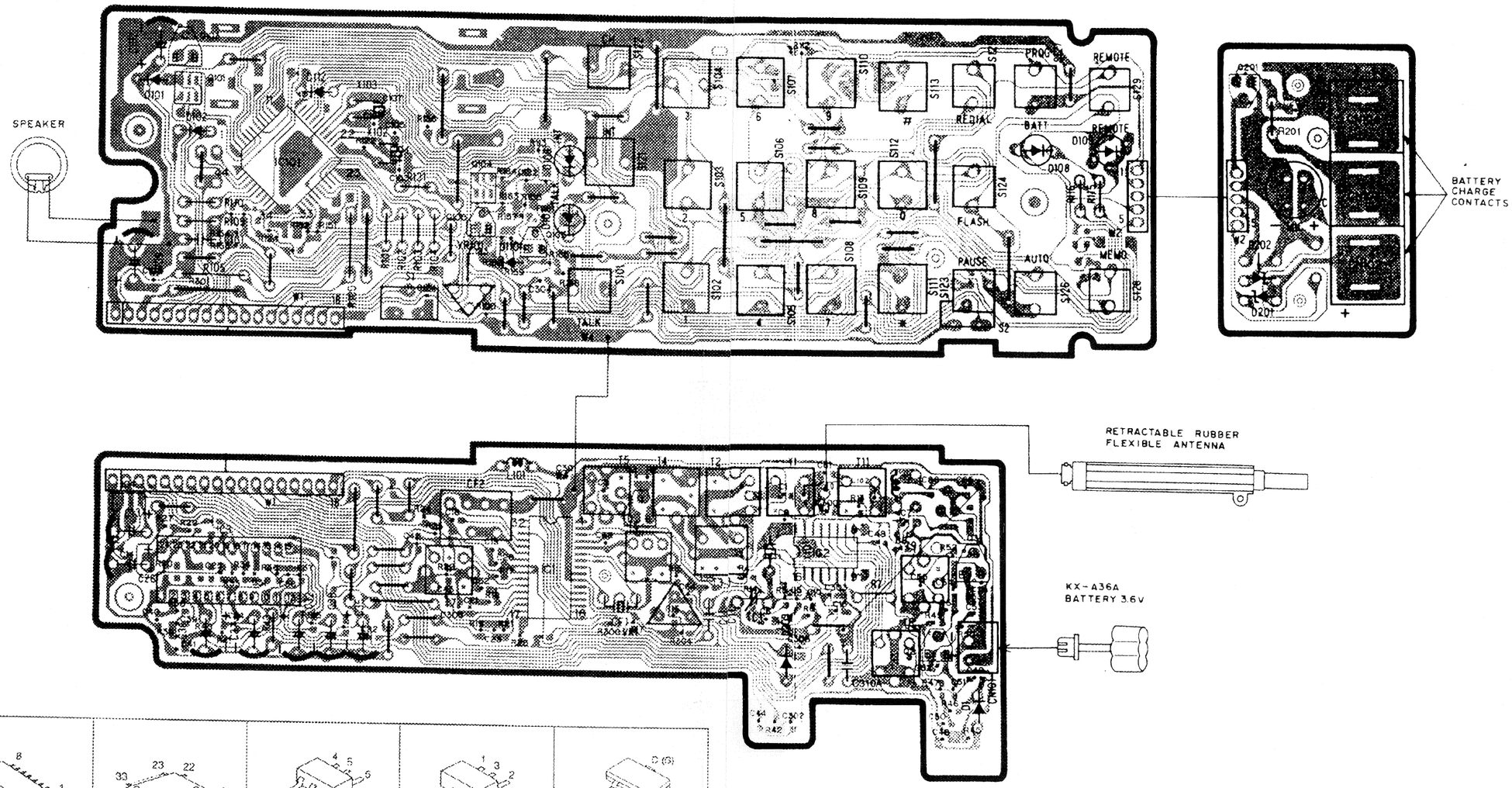
Notes:

1. S1: Volume Selector Switch in "HIGH" position.
2. S2: Power/Ringer switch in "OFF" position.
3. DC voltage measurements are taken with electronic voltmeter from negative voltage line. STANDBY position.

This schematic diagram may be modified at any time with the development of new technology.

CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (KX-T4330R)

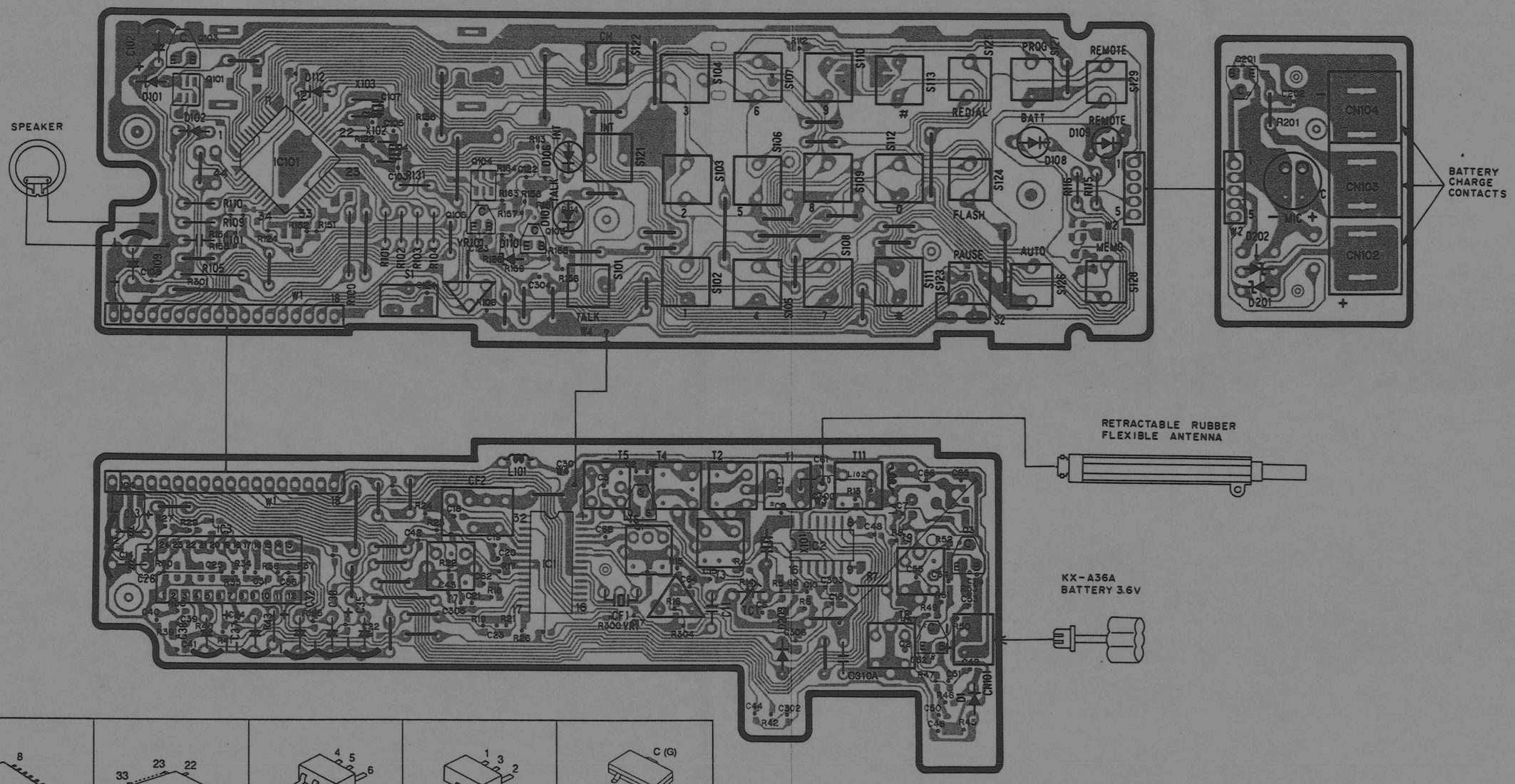
(Component View: Including Flow Solder Side Parts)

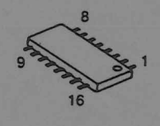
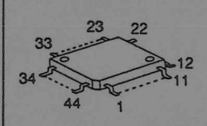
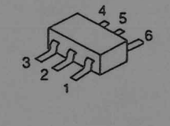
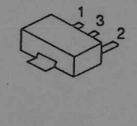
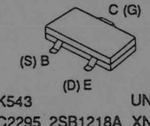
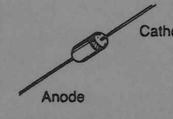
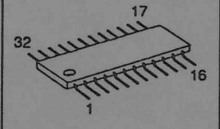
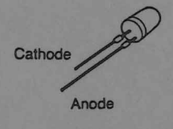
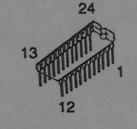
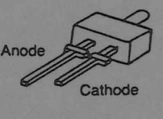


PQVISM5131DS	PQVI004G896	XN4501	PQVIN7201U36	2SK543 UN5113 2SC2295 2SB1218A XN1116 PQVTDTC144E 2SB709A
PQVD1SV145 MA110 MA4068 MA700A PQVDHZS3ALL 1SS131	AN6165K	LN28RPL	AN6168SC	LN330GPX

CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (KX-T4330R)

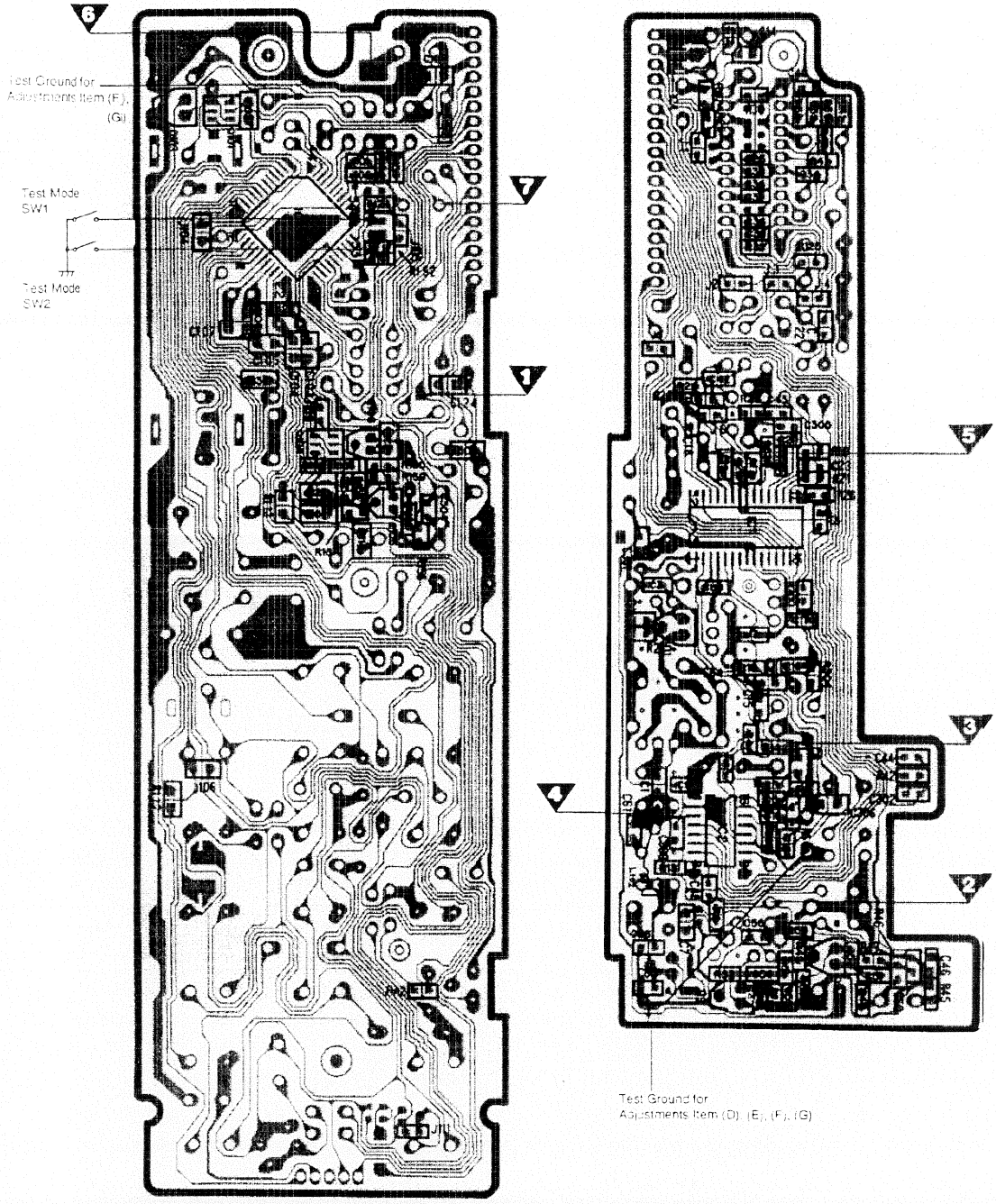
(Component View: Including Flow Solder Side Parts)

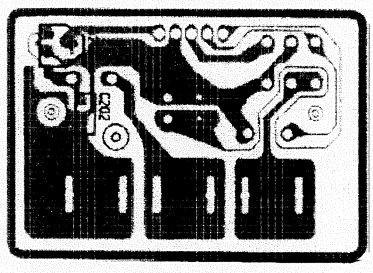


 PQVISM5131DS	 PQVI004G896	 XN4501	 PQVIN7201U30	 2SK543 UN5113 2SC2295 2SB1218A XN1116 PQVTDTC144E 2SB709A
 PQVD1SV145 MA110 MA4068 MA700A PQVDHZS3ALL 1SS131	 AN6165K	 LN28RPL	 AN6168SC	 LN330GPX

CIRCUIT BOARD (KX-T4330R)

(Flow Solder Side View)





ADJUSTMENTS (KX-T4330R)

If your unit have below symptom, adjust for each item following table of adjustment.

Symptom	Remedy
The movement of Battery Low Indicator is wrong.	Adjust the adjustment item (A)
The base unit does not receive a call from portable handset.	Adjust the adjustment item (B)
The base unit does not transmit, and the transmit frequency is slipped.	Adjust the adjustment item (C)
The transmit frequency is slipped.	Adjust the adjustment item (D)
The transmit output is low, and the arrival distance is shorted between base unit and portable handset.	Adjust the adjustment item (E)
The reception sensitivity of base unit is wrong, the noise is occurred.	Adjust the adjustment item (F)
Does not link between base unit and portable handset.	Adjust the adjustment items (G), (H)

Unit Condition:

1. Remove the antenna lead wire from P.C. Board of portable handset.
2. Power Supply: DC 3.9 V
3. Power/Ringer switch: ON
4. Volume Selector: NORMAL
5. Speaker Loard: 130Ω

How to set the test mode.

1. CH10 Test Mode
   SW1, 2, 12,
   Talk switch OFF
   ↓
   SW1 ON
   ↓
   SW12 ON (Stand-By)
   ↓
   Talk switch ON (Talk)

2. CH5 Test Mode
   SW1, 2, 12,
   Talk switch OFF
   ↓
   SW2 ON
   ↓
   SW12 ON (Stand-By)
   ↓
   Talk switch ON (Talk)

3. How to change CH from Test Mode.
   Press the channel button.

   →CH1→CH2→...CH10→

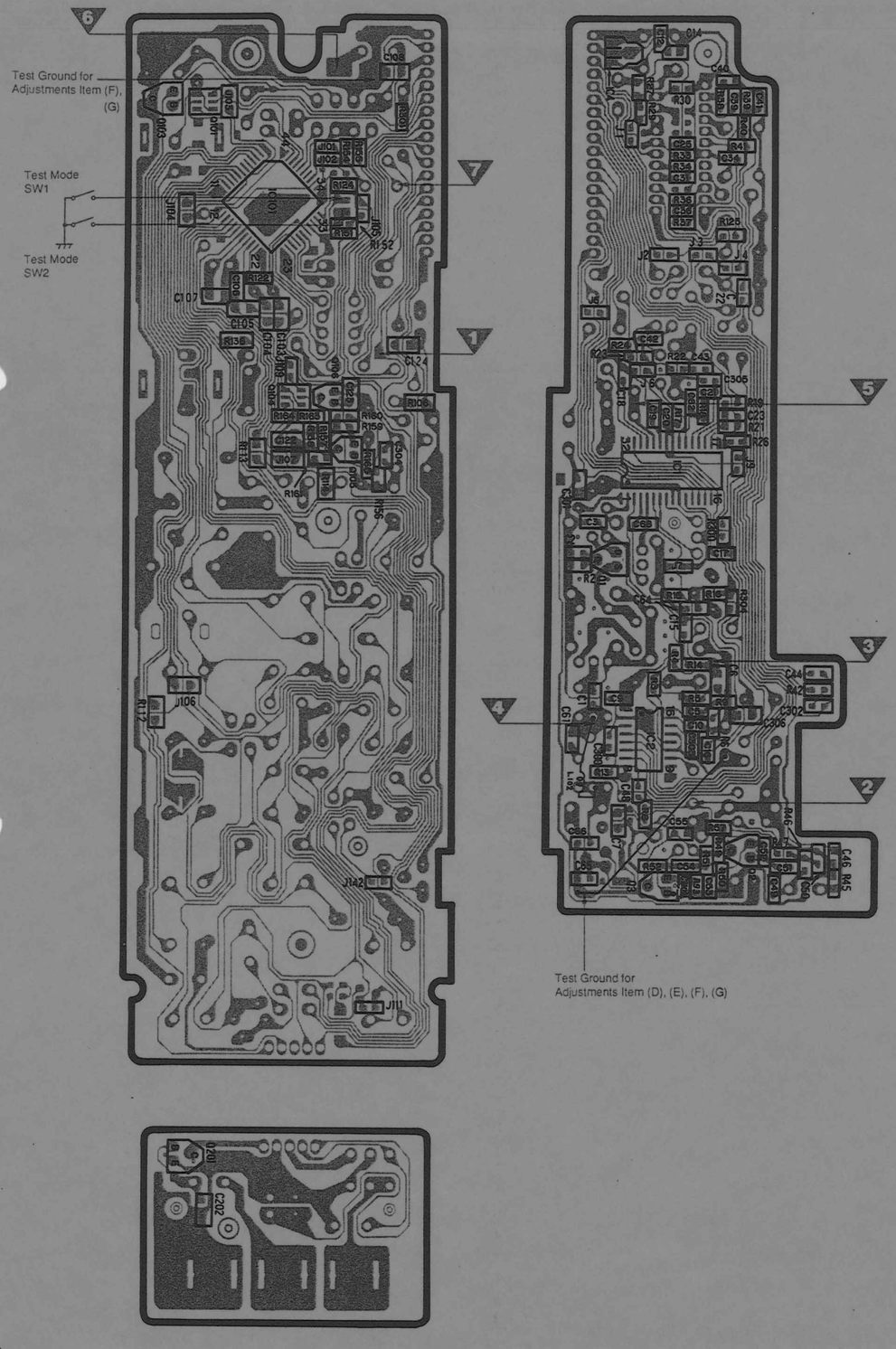
When replacing these parts, adjust as shown below table.

Replace Parts	Adjustment Items	Test Mode	Adjustment Points	Procedure
VR101	(A) Battery Low Adjustment	CH10 Talk	VR101	1. Connect the oscilloscope to ▼-Ground. 2. Set the power supply voltage to DC 3.57 V, and adjust **VR101** so that the reading of oscilloscope is 1 V±0.3 V.
IC1, TC1, X1, D1, T8	(B) TX VCO Voltage Adjustment	CH10 Talk	T8	1. Connect the digital voltmeter to ▼-Ground. 2. Adjust **T8** so that the reading of digital voltmeter is 2.0 V±0.2 V.
IC1, TC1, X1, T6	(C) RX VCO Voltage Adjustment	CH10 Talk	T6	1. Connect the digital voltmeter to ▼-Ground. 2. Adjust **T6** so that the reading of digital voltmeter is 2.1 V±0.2 V.
TC1, X1, IC1	(D) TX Frequency Adjustment	CH10 Talk	TC1	1. Connect the frequency counter to ▼-Ground. 2. Adjust **TC1** so that the reading of frequency counter is 49.970 MHz±100 Hz.
T9, T11	(E) TX output Adjustment	CH10 Talk	T9, T11	1. Connect the RF VTVM to ▼-Ground. 2. Adjust **T9 and T11** for 200 mV–450 mV output on RF VTVM.

KX-T4330

CIRCUIT BOARD (KX-T4330R)

(Flow Solder Side View)



ADJUSTMENTS (KX-T4330R)

If your unit have below symptom, adjust for each item following table of adjustment.

Symptom	Remedy
The movement of Battery Low indicator is wrong.	Adjust the adjustment item (A)
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The base unit does not transmit, and the transmit frequency is slipped.	Adjust the adjustment item (C)
The transmit frequency is slipped.	Adjust the adjustment item (D)
The transmit output is low, and the arrival distance is shorted between base unit and portable handset.	Adjust the adjustment item (E)
The reception sensitivity of base unit is wrong, the noise is occurred.	Adjust the adjustment item (F)
Does not link between base unit and portable handset.	Adjust the adjustment items (G), (H)

Unit Condition:

1. Remove the antenna lead wire from P.C. Board of portable handset.
2. Power Supply: DC 3.9 V
3. Power/Ringer switch: ON
4. Volume Selector: NORMAL
5. Speaker Loard: 130Ω

How to set the test mode.

1. CH10 Test Mode
   SW1, 2, 12,
   Talk switch OFF
   ↓
   SW1 ON
   ↓
   SW12 ON (Stand-By)
   ↓
   Talk switch ON (Talk)

2. CH5 Test Mode
   SW1, 2, 12,
   Talk switch OFF
   ↓
   SW2 ON
   ↓
   SW12 ON (Stand-By)
   ↓
   Talk switch ON (Talk)

3. How to change CH from Test Mode.
   Press the channel button.

   → CH1 → CH2 → ... CH10 →

When replacing these parts, adjust as shown below table.

Replace Parts	Adjustment Items	Test Mode	Adjustment Points	Procedure
VR101	(A) Battery Low Adjustment	CH10 Talk	VR101	1. Connect the oscilloscope to ▼-Ground. 2. Set the power supply voltage to DC 3.57 V, and adjust **VR101** so that the reading of oscilloscope is 1 V±0.3 V.
IC1, TC1, X1, D1, T8	(B) TX VCO Voltage Adjustment	CH10 Talk	T8	1. Connect the digital voltmeter to ▼-Ground. 2. Adjust **T8** so that the reading of digital voltmeter is 2.0 V±0.2 V.
IC1, TC1, X1, T6	(C) RX VCO Voltage Adjustment	CH10 Talk	T6	1. Connect the digital voltmeter to ▼-Ground. 2. Adjust **T6** so that the reading of digital voltmeter is 2.1 V±0.2 V.
TC1, X1, IC1	(D) TX Frequency Adjustment	CH10 Talk	TC1	1. Connect the frequency counter to ▼-Ground. 2. Adjust **TC1** so that the reading of frequency counter is 49.970 MHz±100 Hz.
T9, T11	(E) TX output Adjustment	CH10 Talk	T9, T11	1. Connect the RF VTVM to ▼-Ground. 2. Adjust **T9** and **T11** for 200 mV~450 mV output on RF VTVM.

When replacing these parts, adjust as shown below table.

Replace Parts	Adjustment Items	Test Mode	Adjustment Point	Procedure
T1, T2, T4, T5, T7	(F) RX Adjustment	CH5 Talk	T7 T1, T2, T4, T5	1. Connect the S.S.G. to ▽-Ground. 2. Connect the RF VTVM to ▽-Ground. Connect the AF VTVM to ▽-Ground. 3. Apply a 60 dBμV output from S.S.G. (modulation frequency 1 kHz, dev. 3 kHz) 4. Adjust **T7** so that the reading of AF VTVM is maximum output. 5. Apply a 40 dBμV output from S.S.G. (modulation frequency 1 kHz, dev. 3 kHz) 6. Adjust **T1, T2, T4** and **T5** (in that order) so that the reading of RF VTVM is maximum output.
VR1	(G) Carrier Sensitivity Adjustment	CH5 Stand-By	VR1	1. Connect the oscilloscope to ▽-Ground. 2. Connect the S.S.G. to ▽-Ground. 3. Apply a 9 dBμV output from S.S.G. and adjust **VR1** when oscilloscope becomes from high to low.
Refer to page 65.	(H) Data Modulation of Confirmation	CH10 Talk	———	1. Connect the FM deviation meter ▽-Ground. 2. Keep pressing the flash button. 3. Confirm for a 5–9 kHz FM Deviation Meter reading.

Note: When replacing T3, it is not necessary to adjust. Because T3 has already adjusted by the manufacturer of parts. If you should turn the core of T3 in error, adjust the reading in RF VTVM to become Max. as shown in 6 of item (F) listed above.

Notes

Flow Solder Side View

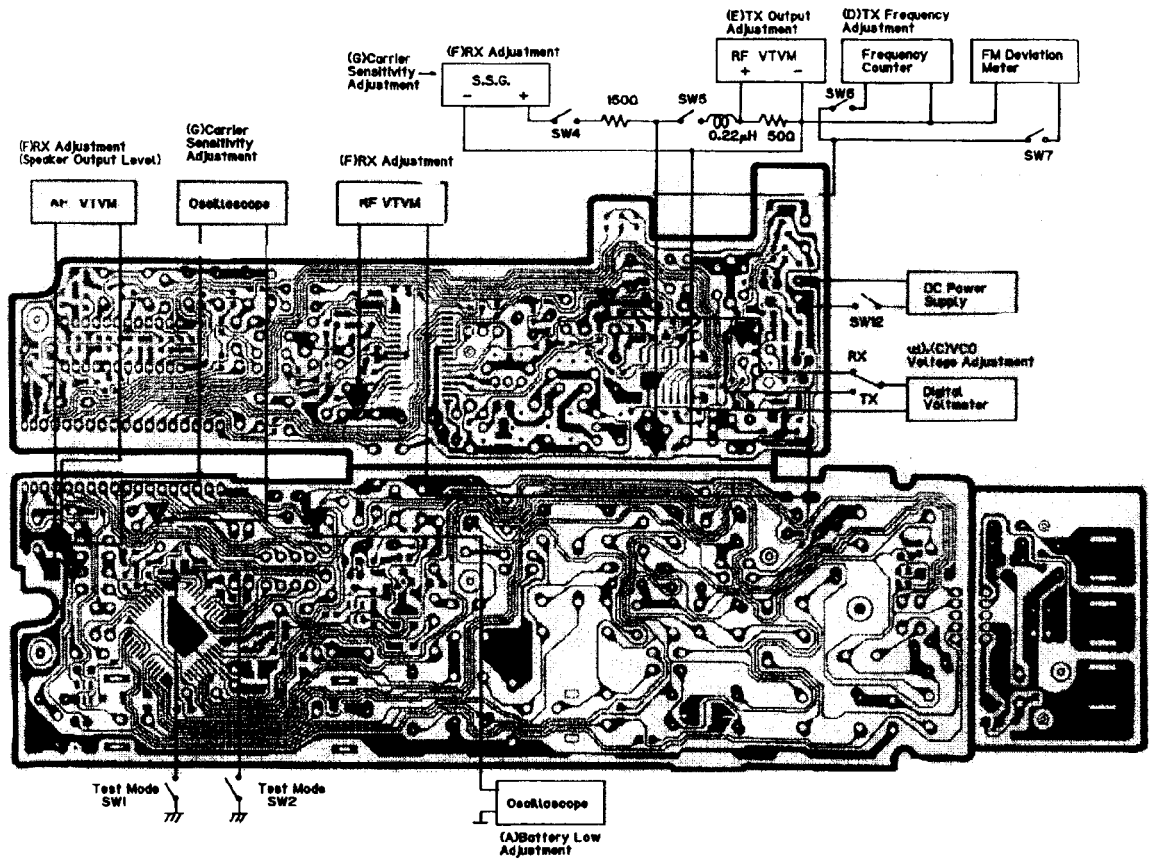


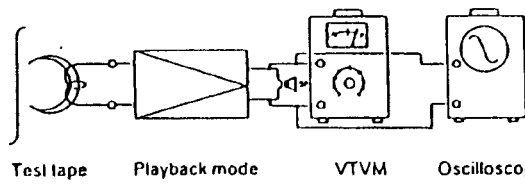
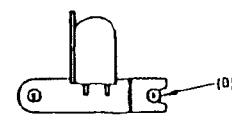
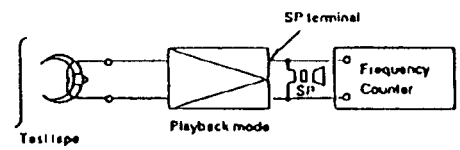
Fig. 13

FREQUENCY TABLE (MHZ)

	KX-T4330H		KX-T4330R	
	Transmit Frequency	Receive Frequency	Transmit Frequency	Receive Frequency
CH1	46.610	49.670	49.670	46.610
CH2	46.630	49.845	49.845	46.630
CH3	46.670	49.860	49.860	46.670
CH4	46.710	49.770	49.770	46.710
CH5	46.730	49.875	49.875	46.730
CH6	46.770	49.830	49.830	46.770
CH7	46.830	49.890	49.890	46.830
CH8	46.870	49.930	49.930	46.870
CH9	46.930	49.990	49.990	46.930
CH10	46.970	49.970	49.970	46.970

MEASUREMENT AND ADJUSTMENT METHOD

Notes: 1. Make sure the heads are clean.
2. Make sure the capstan and pressure roller are clean.
3. Room temperature for measuring and adjusting: 20 ± 5°C (68 ± 9°F)
4. Test equipments are not treated as replacement parts.

ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
1. Head azimuth adjustment	1. Play back test tape (QZZCWAT or PQZZLCT2401A) [Ref. No. Z3]. 2. Adjust screw (B) shown in fig. B for maximum output at SP terminal. (Test equipment connection is shown below.)  Fig. A	*Record/playback head  Fig. B
2. Tape speed adjustment	1. Play back test tape (QZZCWAT or PQZZLCT2401A) [Ref. No. Z3]. 2. Adjust VR1 for 2990±10 Hz on frequency counter reading.  Fig. C	

When replacing these parts, adjust as shown below table.

Replace Parts	Adjustment Items	Test Mode	Adjustment Point	Procedure
T1, T2, T4, T5, T7	(F) RX Adjustment	CH5 Talk	T7 T1, T2, T4, T5	1. Connect the S.S.G. to ▽-Ground. 2. Connect the RF VTVM to ▽-Ground. Connect the AF VTVM to ▽-Ground. 3. Apply a 60 dBμV output from S.S.G. (modulation frequency 1 kHz, dev. 3 kHz) 4. Adjust **T7** so that the reading of AF VTVM is maximum output. 5. Apply a 40 dBμV output from S.S.G. (modulation frequency 1 kHz, dev. 3 kHz) 6. Adjust **T1**, **T2**, **T4** and **T5** (in that order) so that the reading of RF VTVM is maximum output.
VR1	(G) Carrier Sensitivity Adjustment	CH5 Stand-By	VR1	1. Connect the oscilloscope to ▽-Ground. 2. Connect the S.S.G. to ▽-Ground. 3. Apply a 9 dBμV output from S.S.G. and adjust **VR1** when oscilloscope becomes from high to low.
Refer to page 65.	(H) Data Modulation of Confirmation	CH10 Talk	——	1. Connect the FM deviation meter ▽-Ground. 2. Keep pressing the flash button. 3. Confirm for a 5~9 kHz FM Deviation Meter reading.

Note: When replacing T3, it is not necessary to adjust. Because T3 has already adjusted by the manufacturer of parts. If you should turn the core of T3 in error, adjust the reading in RF VTVM to become Max. as shown in 6 of item (F) listed above.

Flow Solder Side View

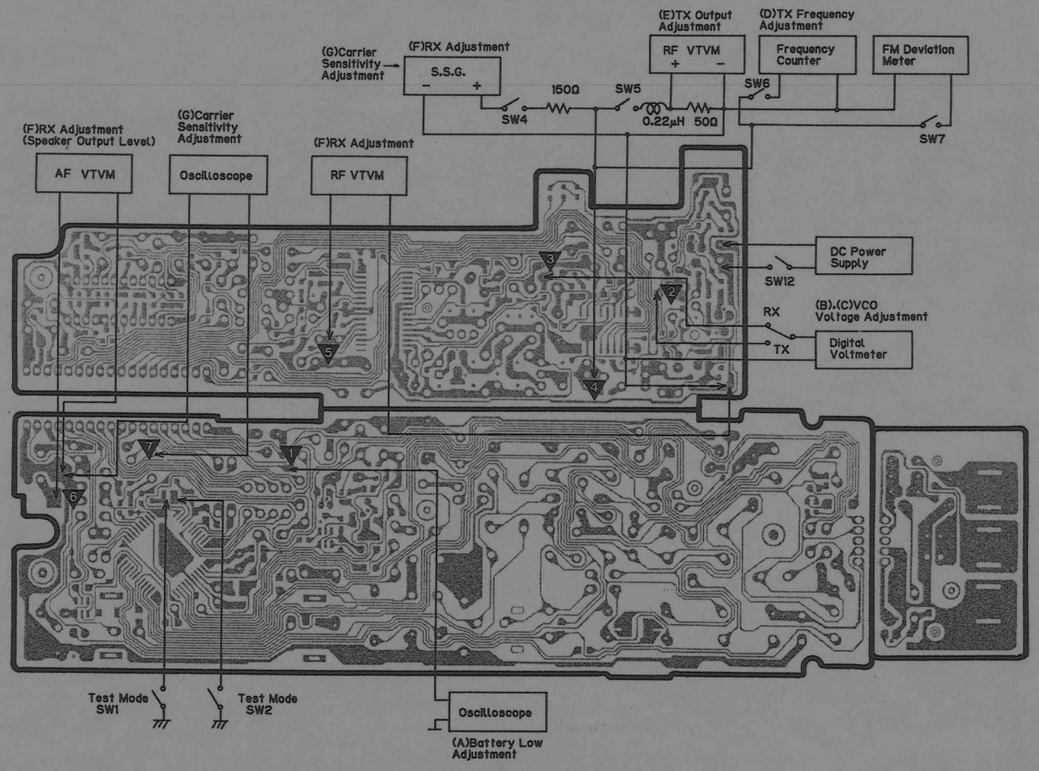


Fig. 13

FREQUENCY TABLE (MHZ)

	KX-T4330H		KX-T4330R	
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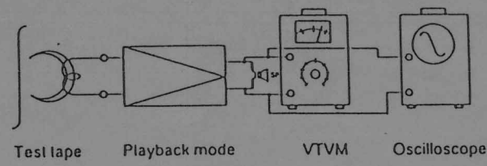
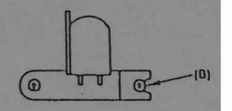
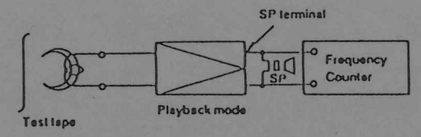
CH3	46.670	49.860	49.860	46.670
CH4	46.710	49.770	49.770	46.710
CH5	46.730	49.875	49.875	46.730
CH6	46.770	49.830	49.830	46.770
CH7	46.830	49.890	49.890	46.830
CH8	46.870	49.930	49.930	46.870
CH9	46.930	49.990	49.990	46.930
CH10	46.970	49.970	49.970	46.970

MEASUREMENT AND ADJUSTMENT METHOD

Notes: 1. Make sure the heads are clean.
2. Make sure the capstan and pressure roller are clean.
3. Room temperature for measuring and adjusting: 20±5°C (68±9°F)
4. Test equipments are not treated as replacement parts.

ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
1. Head azimuth adjustment	1. Play back test tape (QZZCWAT or PQZZLCT2401A) [Ref. No. Z3]. 2. Adjust screw (B) shown in fig. B for maximum output at SP terminal. (Test equipment connection is shown below.)  Fig. A	*Record/playback head  Fig. B
2. Tape speed adjustment	1. Play back test tape (QZZCWAT or PQZZLCT2401A) [Ref. No. Z3]. 2. Adjust VR1 for 2990±10 Hz on frequency counter reading.  Fig. C	

CPU DATA KX-T4330H (Base Unit)

IC9 PQVI4639A16F

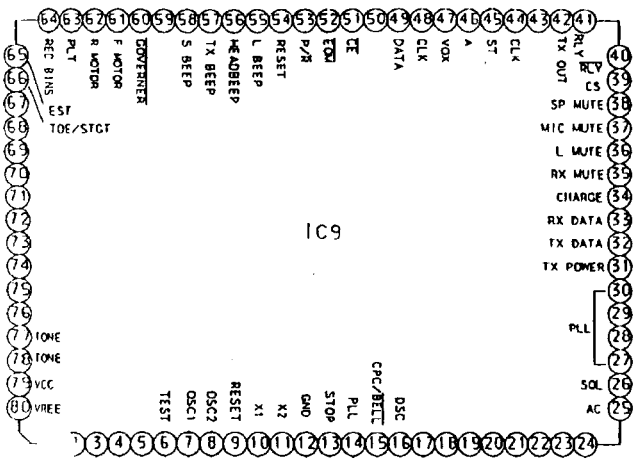


Fig. 14

Option

Name	ON	OFF
DSCOPT	No response in 1.8 s	After 360 ms
2 WAY BEEP	BEEP ON	BEEP OFF
CH BEEP	BEEP of CH switching	BEEP OFF
PPS	20	10
FLASH 0	(See below.)	
1		
2		
BSL OPT	Bell 230 ms	Bell 600 ms
% BREAK	67%	61%
REMOTE 0 bit	1	0
CODE 1 bit	1	0
2 bits	1	0
3 bits	1	0

	FLASH 2	FLASH 1	FLASH 0
Long pressing (500+100×n)	OFF	OFF	OFF
600 ms	◀	OFF	OFF
450 ms	—	OFF	◀
250 ms	—	◀	OFF
80 ms	—	◀	◀

(——: Either will do.)

Pin	Name	IN/ OUT	Hi	Low	Pin	Name	IN/ OUT	Hi	Low
1	Key/Option Input	I		ON	41	TR-Relay	O	TR ON	
2	Key/Option Input	I		ON	42	TX Mute	O	Mute	
3	Key/Option Input	I		ON	43	SW Rec Time	I	1 Min	VOX
4	Key/Option Input	I		ON	44	Clock	O		
5	Key/Option Input	I		ON	45	LED Power Control	O	LED OFF	LED ON
6	Test	I	Normal		46	Data	O		
7	OSC1 3.58 MHz	I			47	Vox Input	I		VOX
8	OSC2 3.58 MHz	O			48	Clock	O		
9	Reset	I	Reset		49	Data	O		
10	X1	I	Fixed		50	SW Dialing Mode	I	Pulse	Tone
11	X2	O			51	Chip Enable IC OGM	O		Enable
12	GND				52	End of MSG IC OGM	I		End MSG
13	Stop			Stop	53	Play/Rec IC OGM	O	Play	Rec
1	Plunger Latch	O	ON		54	Reset IC OGM	O	Reset	
15	CPC/Bell	I	CPC	Bell	55	Line Beep	O		
16	Auto Disconnect	I	Off-Hook		56	Head Beep	O		
17	(Voice Busy)	I	Busy		57	TX Beep	O		
18	(Voice Serial)	O	Normal		58	SP Beep	O		
19	(Voice Initial)	O		Initial	59	SP Beep Volume	O	Vol. High	Vol. Low
20	SW Message Alert	I	OFF	ON	60	Governor Motor	O	FF/REW	Play
21	SW Ringer Volume	I		OFF	61	Forward Motor	O	ON	
22	SW Ringer Volume	I		High	62	Rewind Motor	O	ON	
23	SW Rings	I		2 times	63	Plunger Triger	O	ON	
24	SW Rings	I		T.S.	64	Tape Rec Bias	O	ON	
25	AC Down	I	AC ON	AC OFF	65	EST DTMF-R	I	DTMF	
26	Squelch	I	ON		66	TOE/STGT DTMF-R	O	Data Get	
27	PLL Channel	O			67	Option Strobe	O		ON
28	PLL Channel	O			68	Option Strobe	O		ON
29	PLL Channel	O			69	Option Strobe	O		ON
30	PLL Channel	O			70	Option Strobe	O		ON
31	TX Power	O	ON	OFF	71	Power Supply RVN, SW	O	ON	
32	TX Data	O			72	RVN	I		
33	RX Data	I			73	Key Strobe	O		ON
34	Charge Input	I	Charge		74	Key Strobe	O		ON
35	RX Mute	O	Mute		75	SW CPC A, B	I	CPC B	CPC A
36	Line Mute	O	Mute		76	CPU Speed Select	I	Fixed	
37	Mic Mute	O	Mute		77	DTMF –C Out	O		
38	SP-Phone Mute	O	Mute		78	DTMF –R Out	O		
39	SP-Phone CS	O		Chip ON	79	V_{cc}	I		
40	TR-Relay Invert	O		TR ON	80	VTREF	I	Fixed	

■ PQVI4639A16F (IC9) BLOCK DIAGRAM

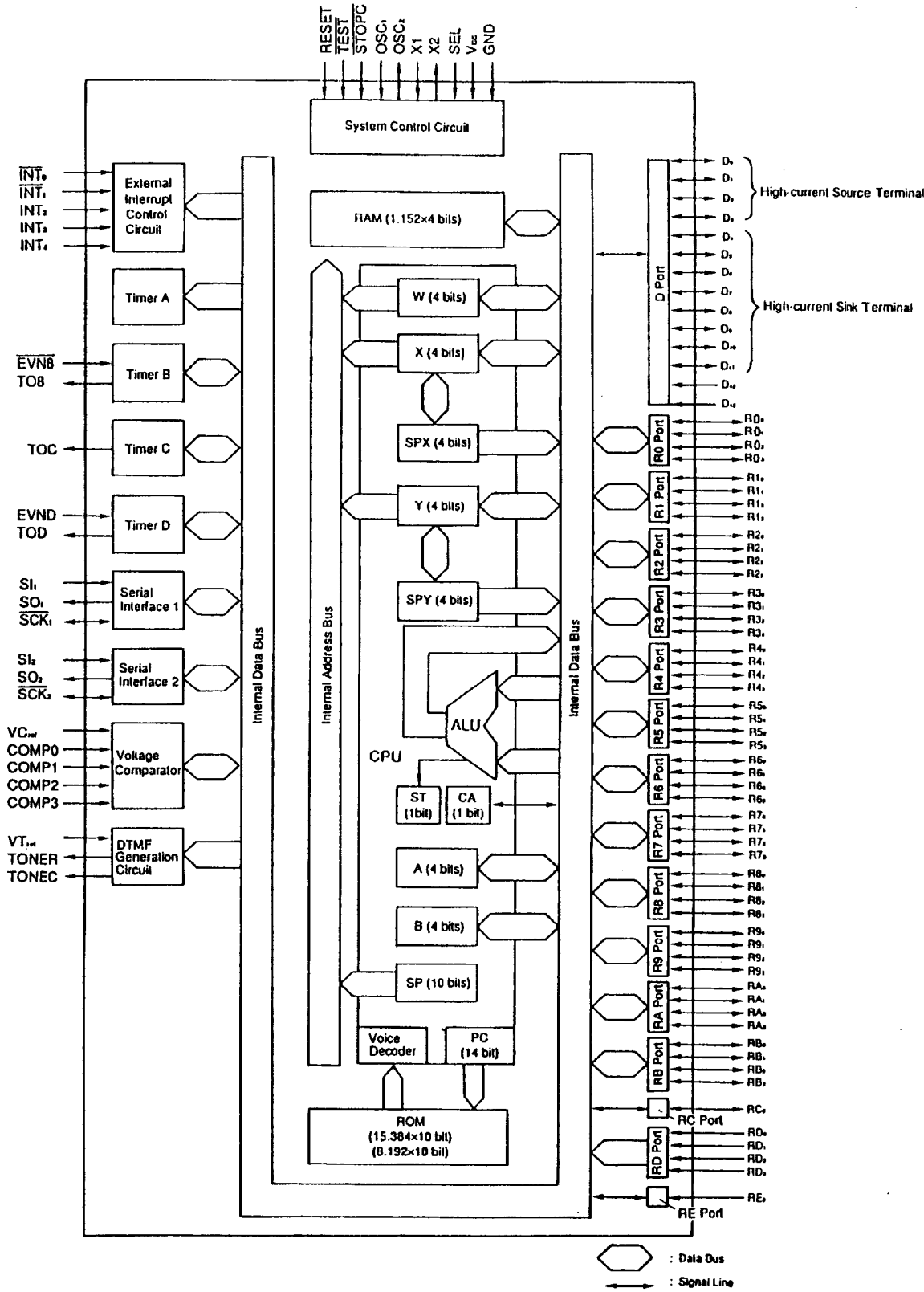


Fig. 15

CPU DATA KX-T4330H (Base Unit)

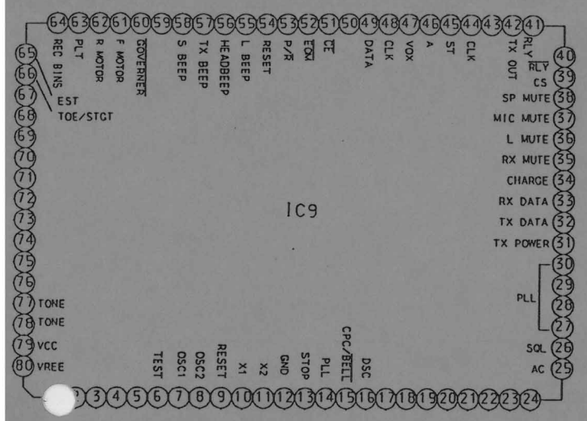


Fig. 14

IC9 PQVI4639A16F

Option

Name	ON	OFF
DSCOPT	No response in 1.8 s	After 360 ms
2 WAY BEEP	BEEP ON	BEEP OFF
CH BEEP	BEEP of CH switching	BEEP OFF
PPS	20	10
FLASH 0	(See below.)	
1		
2		
BSL OPT	Bell 230 ms	Bell 600 ms
% BREAK	67%	61%
REMOTE 0 bit	1	0
CODE 1 bit	1	0
2 bits	1	0
3 bits	1	0

	FLASH 2	FLASH 1	FLASH 0
Long pressing (500+100×n)	OFF	OFF	OFF
600 ms	◀	OFF	OFF
450 ms	—	OFF	◀
250 ms	—	◀	OFF
80 ms	—	◀	◀

(——: Either will do.)

Pin	Name	IN/ OUT	Hi	Low	Pin	Name	IN/ OUT	Hi	Low
1	Key/Option Input	I		ON	41	TR-Relay	O	TR ON	
2	Key/Option Input	I		ON	42	TX Mute	O	Mute	
3	Key/Option Input	I		ON	43	SW Rec Time	I	1 Min	VOX
4	Key/Option Input	I		ON	44	Clock	O		
5	Key/Option Input	I		ON	45	LED Power Control	O	LED OFF	LED ON
6	Test	I	Normal		46	Data	O		
7	OSC1 3.58 MHz	I			47	Vox Input	I		VOX
8	OSC2 3.58 MHz	O			48	Clock	O		
9	Reset	I	Reset		49	Data	O		
10	X1	I	Fixed		50	SW Dialing Mode	I	Pulse	Tone
11	X2	O			51	Chip Enable IC OGM	O		Enable
12	GND				52	End of MSG IC OGM	I		End MSG
13	Stop			Stop	53	Play/Rec IC OGM	O	Play	Rec
14	Plunger Latch	O	ON		54	Reset IC OGM	O	Reset	
15	CPC/Bell	I	CPC	Bell	55	Line Beep	O		
16	Auto Disconnect	I	Off-Hook		56	Head Beep	O		
17	(Voice Busy)	I	Busy		57	TX Beep	O		
18	(Voice Serial)	O	Normal		58	SP Beep	O		
19	(Voice Initial)	O		Initial	59	SP Beep Volume	O	Vol. High	Vol. Low
20	SW Message Alert	I	OFF	ON	60	Governor Motor	O	FF/REW	Play
21	SW Ringer Volume	I		OFF	61	Forward Motor	O	ON	
22	SW Ringer Volume	I		High	62	Rewind Motor	O	ON	
23	SW Rings	I		2 times	63	Plunger Triger	O	ON	
24	SW Rings	I		T.S.	64	Tape Rec Bias	O	ON	
25	AC Down	I	AC ON	AC OFF	65	EST DTMF-R	I	DTMF	
26	Squelch	I	ON		66	TOE/STGT DTMF-R	O	Data Get	
27	PLL Channel	O			67	Option Strobe	O		ON
28	PLL Channel	O			68	Option Strobe	O		ON
29	PLL Channel	O			69	Option Strobe	O		ON
30	PLL Channel	O			70	Option Strobe	O		ON
31	TX Power	O	ON	OFF	71	Power Supply RVN, SW	O	ON	
32	TX Data	O			72	RVN	I		
33	RX Data	I			73	Key Strobe	O		ON
34	Charge Input	I	Charge		74	Key Strobe	O		ON
35	RX Mute	O	Mute		75	SW CPC A, B	I	CPC B	CPC A
36	Line Mute	O	Mute		76	CPU Speed Select	I	Fixed	
37	Mic Mute	O	Mute		77	DTMF –C Out	O		
38	SP-Phone Mute	O	Mute		78	DTMF –R Out	O		
39	SP-Phone CS	O		Chip ON	79	V_{cc}	I		
40	TR-Relay Invert	O		TR ON	80	VTREF	I	Fixed	

■ PQVI4639A16F (IC9) BLOCK DIAGRAM

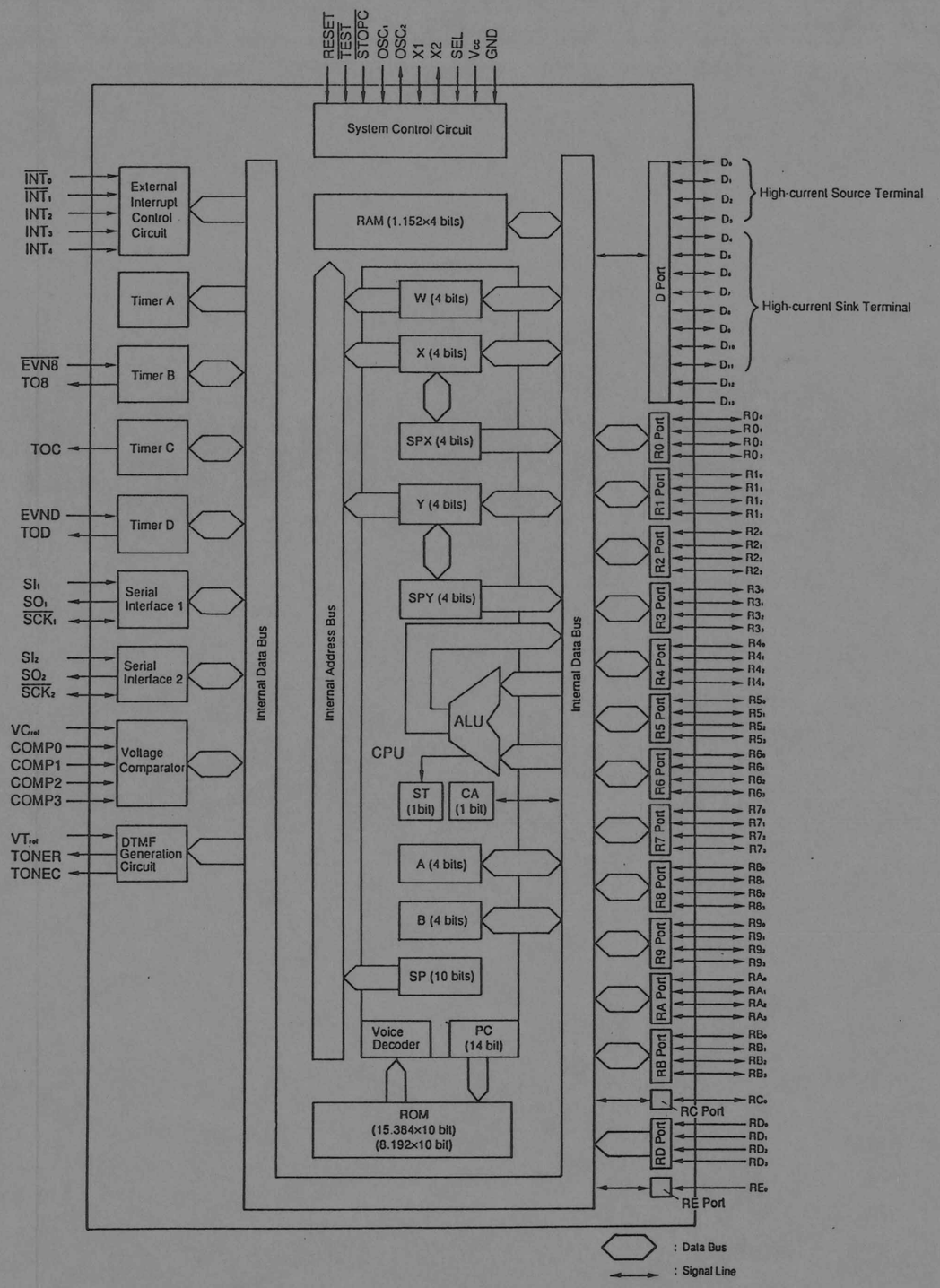


Fig. 15

■ PQVI4639A16F (IC9) TERMINALS EXPLANATION

Pin No.	Classification	Pin Name	I/O	Description
79	Power Supply	V_{CC}		Power supply voltage is connected.
12		GND		For ground connection.
6	System Control	$\overline{TEST}$	I	Not for user application. For V_{CC} potential connection.
9		RESET	I	Used to reset MCU.
7		OSC_1	I	I/O terminals connecting to the System Clock Oscillator. For connection of the ceramic oscillator, crystal oscillator or the external oscillation circuit.
8		OSC_2	O	
10		X1	I	I/O terminals connecting to the Sub-System Clock Oscillator. For 32.768 kHz crystal oscillator connection.
11		X2	O	
25		$\overline{STOPC}$	I	Input terminal used for transition from the stop mode to the active mode.
76		SEL	I	Selects the frequency division ratio of the system clock after the reset mode is activated or the active mode resumes (from the stop mode). V_{CC} potential connection selects 4-divided frequency. GND potential connection selects 32-division.
13~24	Port	D_0~D_{11}	I/O	I/O terminals addressed by every 1 bit. D_0–D_3 are high-current source terminals (max. 10 mA). D_4–D_{11} are high-current sink terminals (max. 15 mA).
25, 26		D_{12}, D_{13}	I	Input terminals addressed by every 1 bit.
27~75		RO_0~RC_0	I/O	I/O terminals addressed by every 4 bits.
1~5		RD_0~RD_3, RE_0	I	I/O terminals addressed by every 4 bits.
26~30	Interrupt	$\overline{INT_0}$–INT_4	I	Input terminals for external interrupt.
78	DTMF	TONER	O	Output terminal of DTMF signal (ROW).
77		TONEC	O	Output terminal of DTMF signal (COLUMN).
80		VT_{ref}		Reference level power supply terminal of DTMF signal. The voltage condition is $V_{CC} \geqq VT_{ref} \geqq GND$.
42, 43	Timer	$\overline{EVNB}$, EVND	I	Timer event input terminal.
39~41		TOB, TOC, TOD	O	Timer output terminal.
44, 48	Serial Communication Interface	$\overline{SCK_1}$, $\overline{SCK_2}$	I/O	Clock I/O terminals of SCI.
45, 49		SI1, SI2	I	Receiving data input terminal of SCI.
46, 50		SO_1, SO_2	O	Transmitting data output terminal of SCI.
1~4	Voltage Comparator	$COMP_0$~$COMP_3$	I	Analog input terminals of the voltage comparator.
5		VC_{ref}		Input terminal of the reference level voltage of the voltage comparator.

CPU DATA KX-T4330R (Portable Handset)

IC101 PQVI004G896

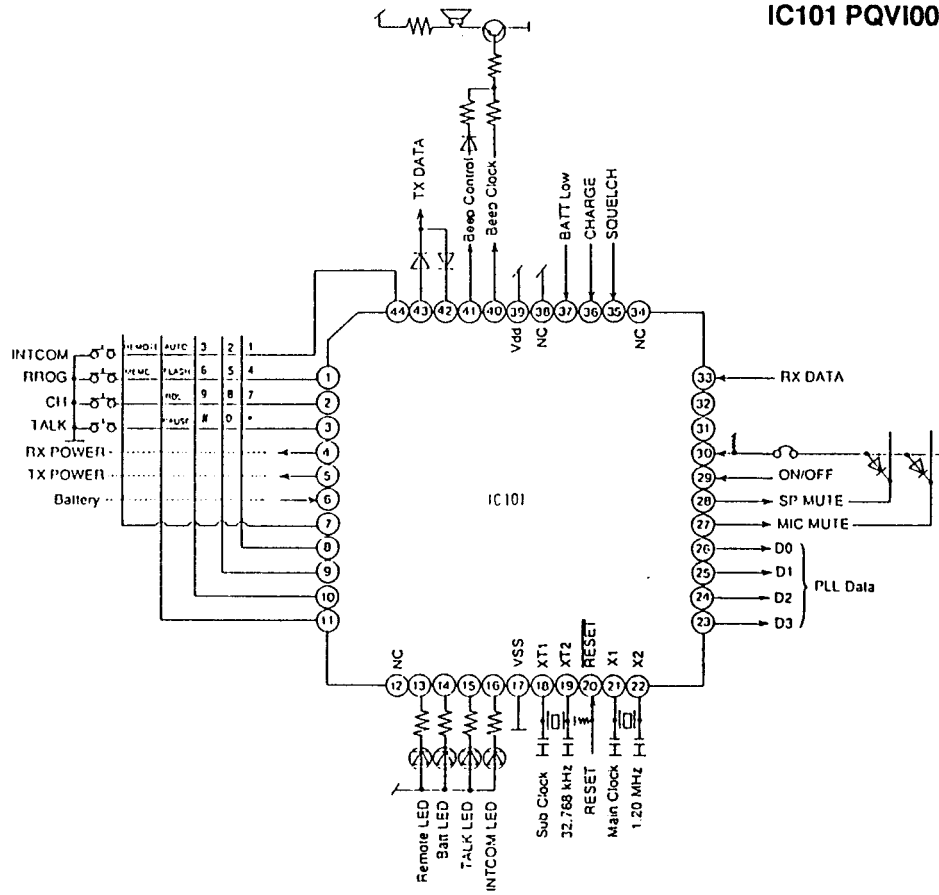


Fig. 16

Pin No.	Mark	Description	H	L	Pin No.	Mark	Description	H	L
1		KEY IN 2	NORMAL	ACTIVE	23		PLL DATA 3		
2		KEY IN 1	NORMAL	ACTIVE	24		PLL DATA 2		
3		KEY IN 0	NORMAL	ACTIVE	25		PLL DATA 1		
4		RX POWER	OFF	ON	26		PLL DATA 0		
5		TX POWER	OFF	ON	27		MIC MUTE	MUTE	UNMUTE
6		Battery	With Battery	With Battery	28		RX MUTE	MUTE	UNMUTE
7		KEY STROBE 4	NORMAL	ACTIVE	29		ON/OFF SWITCH	OFF	ON
8		KEY STROBE 3	NORMAL	ACTIVE	30				
9		KEY STROBE 2	NORMAL	ACTIVE	31				
10		KEY STROBE 1	NORMAL	ACTIVE	32				
11		KEY STROBE 0	NORMAL	ACTIVE	33		RX DATA		
12	NC	(NO CONNECT)			34	NC	(NO CONNECT)		
13		LED (REMOTE)	OFF	ON	35		SQUELCH	LOW	HIGH
14		LED (BATT/PROG)	OFF	ON	36		CHARGE	CHARGE	NORMAL
					37		BATT LOW	HIGH	LOW
15		LED (TALK)	OFF	ON	38	NC			
16		LED (INT' COM)	OFF	ON	39	V_{DD}	POWER SOURCE		
17	V_{SS}	GND			40		BEEP CLOCK	NORMAL	(2 kHz)
18	XT1	SUB CLOCK			41		BEEP CONTROL	Sound Pressure Low	Sound Pressure High
19	XT2	(32.768 KHz)							
20	$\overline{RESET}$	RESET	NORMAL	ACTIVE	42		TX DATA		
21	X1	MAIN CLOCK			43		TX DATA		
22	X2	(1.2 MHz)			44		KEY IN 3	NORMAL	ACTIVE

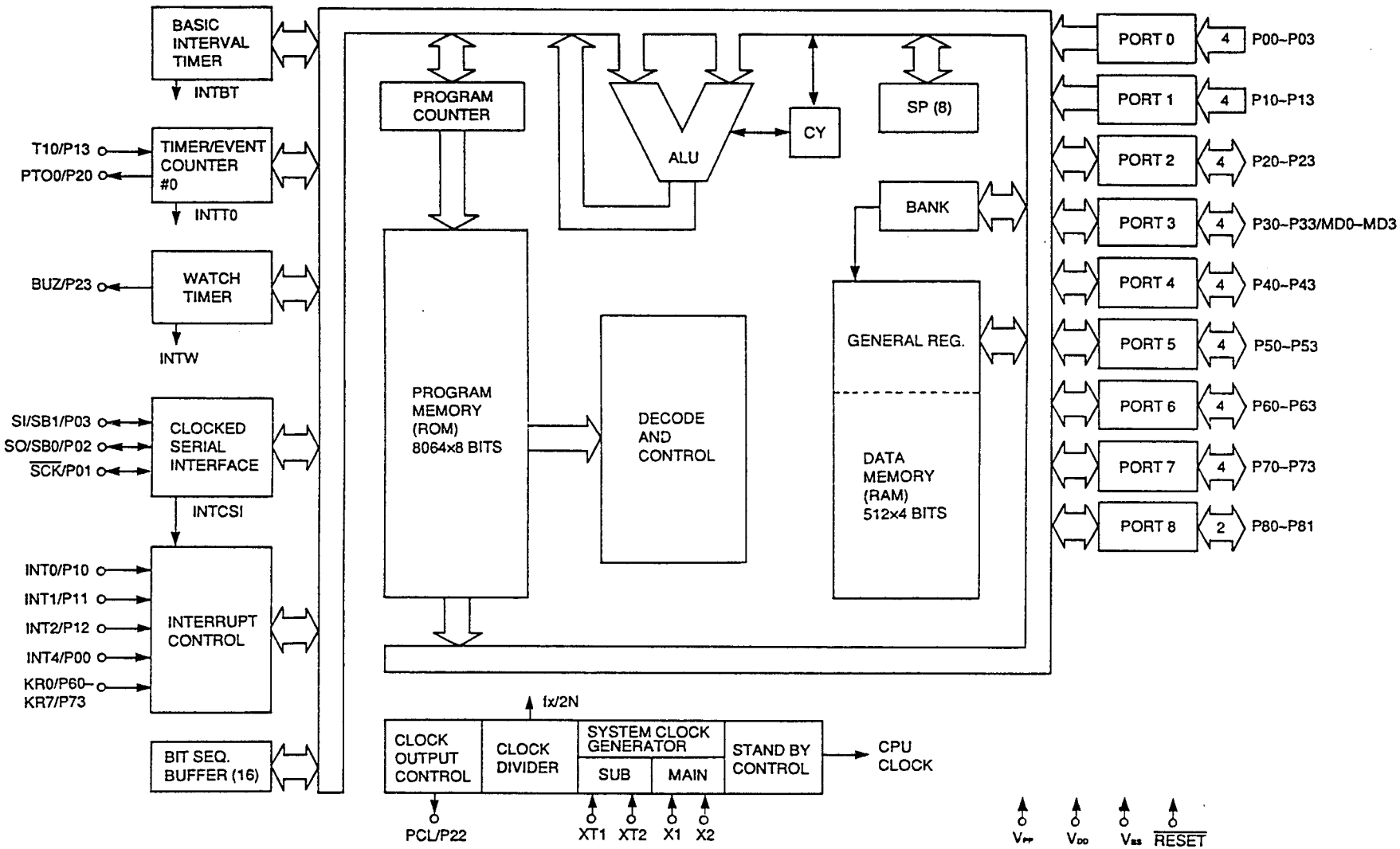

BASIC INTERVAL TIMER
INTBT
T10/P13
PTO0/P20
TIMER/EVENT COUNTER #0
INTT0
BUZ/P23
WATCH TIMER
INTW
SI/SB1/P03
SO/SB0/P02
SCK/P01
CLOCKED SERIAL INTERFACE
INTCSI
INT0/P10
INT1/P11
INT2/P12
INT4/P00
KR0/P60–KR7/P73
INTERRUPT CONTROL
BIT SEQ. BUFFER (16)
PROGRAM COUNTER
ALU
CY
SP (8)
BANK
PROGRAM MEMORY (ROM) 8064×8 BITS
DECODE AND CONTROL
GENERAL REG.
DATA MEMORY (RAM) 512×4 BITS
PORT 0
PORT 1
PORT 2
PORT 3
PORT 4
PORT 5
PORT 6
PORT 7
PORT 8
4
4
4
4
4
4
4
4
2
P00–P03
P10–P13
P20–P23
P30–P33/MD0–MD3
P40–P43
P50–P53
P60–P63
P70–P73
P80–P81
fx/2N
CLOCK OUTPUT CONTROL
CLOCK DIVIDER
SYSTEM CLOCK GENERATOR
SUB
MAIN
STAND BY CONTROL
CPU CLOCK
PCL/P22
XT1
XT2
X1
X2
VPP
VDD
VSS
RESET

Fig. 17

■ PQVI004G896 (IC101) TERMINALS EXPLANATION

Pin No.	Pin Name	I/O	Combined Terminal	Description
32	P00	I	INT_4	4-bit input ports (PORTO). The built-in pull-up resistor can be designated in 3 bits by software (PO1, P02 and P03).
31	P01	I/O	$\overline{SCK}$	
30	P02	I/O	SO/SB_0	
29	P03	I/O	SI/SB_1	
37	P10	I	INT_0	With noise reduction function 4-bit input ports (PORT1). The built-in pull-up resistor can be designated in 4 bits by software.
36	P11		INT_1	
35	P12		INT_2	
33	P13		TI_0	
43	P20	I/O	PTO_0	4-bit I/O ports (PORT2). The built-in pull-up resistor can be designated in 4 bits by software.
42	P21		—	
41	P22		PCL	
40	P23		BUZ	
26	P30	I/O	—	Programmable 4-bit I/O ports (PORT3). The input/output can be set in every bit. The built-in pull-up resistor can be designated in 4 bits by software.
25	P31		—	
24	P32		—	
23	P33		—	
13~16	P40~P43	I/O	—	N-ch open drain 4-bit I/O ports (PORT4). The built-in pull-up resistor can be designated in every bit. (Mask option) At open drain: 10 V pressure
8~11	P50~P53	I/O	—	N-ch open drain 4-bit I/O ports (PORT5). The built-in pull-up resistor can be designated in every bit. (Mask option) At open drain: 10 V pressure
7	P60	I/O	KR_0	Programmable 4-bit I/O ports (PORT6). The built-in pull-up resistor can be designated in every bit. (Mask option) At open drain: 10 V pressure
6	P61		KR_1	
5	P62		KR_2	
4	P63		KR_3	
3	P70	I/O	KR_4	4-bit I/O ports (PORT7). The built-in pull-up resistor can be designated in 4 bits by software.
2	P71		KR_5	
1	P72		KR_6	
44	P73		KR_7	
28	P80	I/O	—	2-bit I/O ports (PORT8). The built-in pull-up resistor can be designated in 2 bits by software.
27	P81		—	

EXPLANATION OF CPU DATA COMMUNICATION

1. Calling

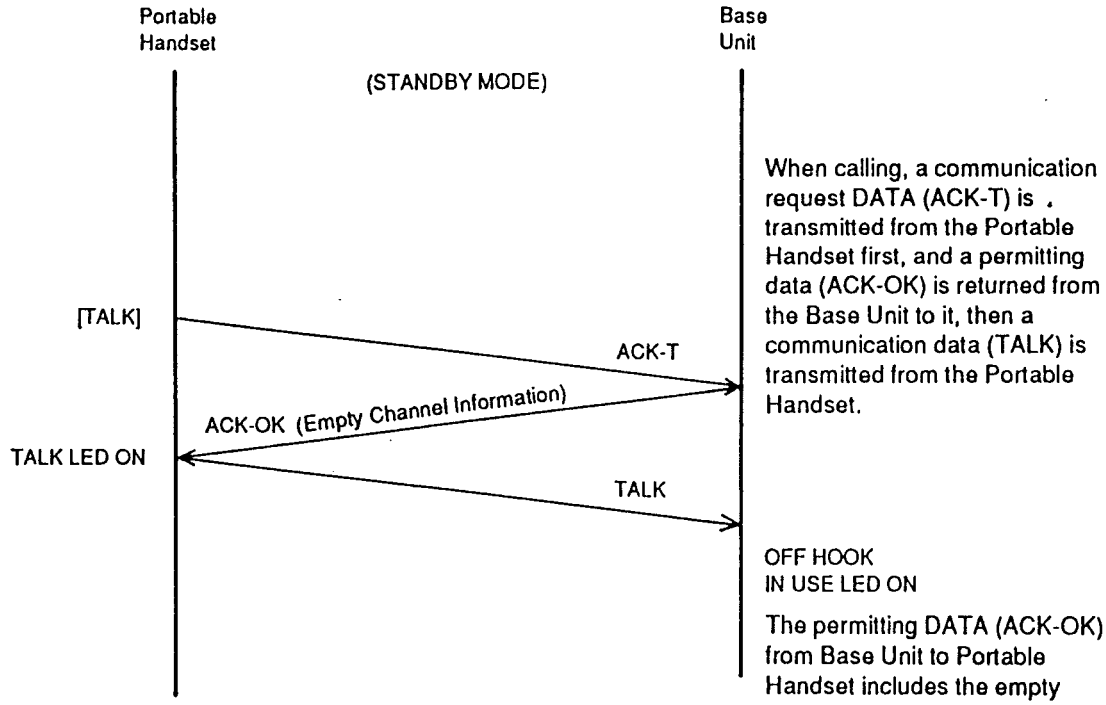


Fig. 18

2. To terminate Communication

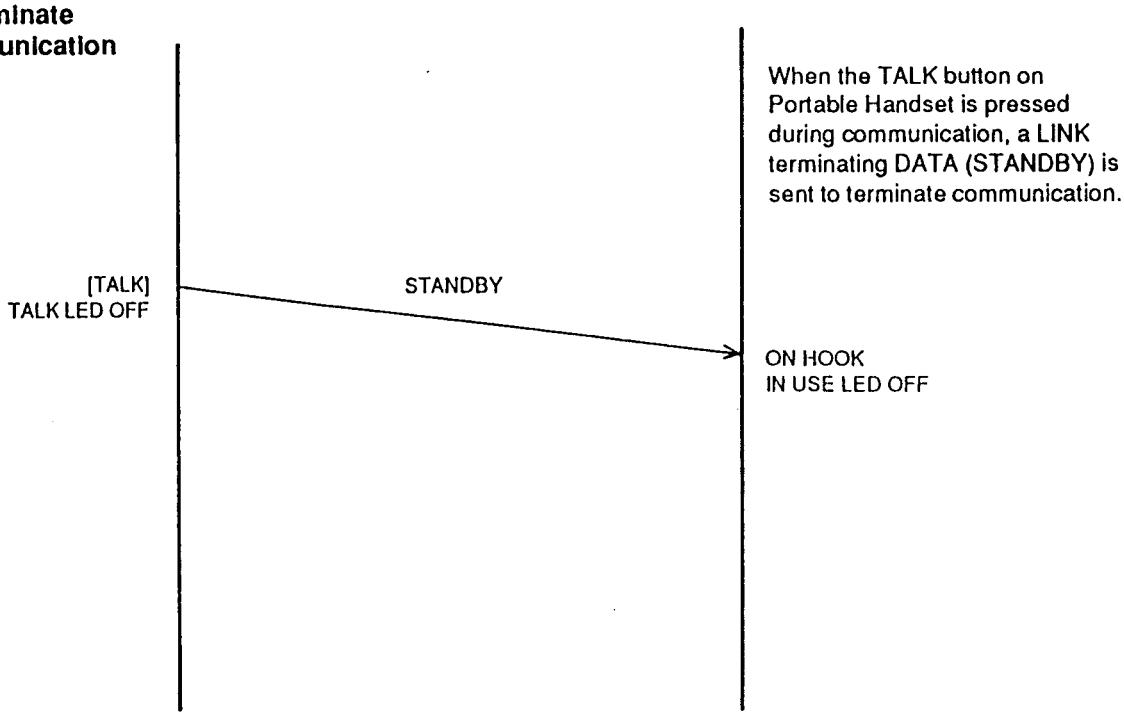


Fig. 19

3. Ringing

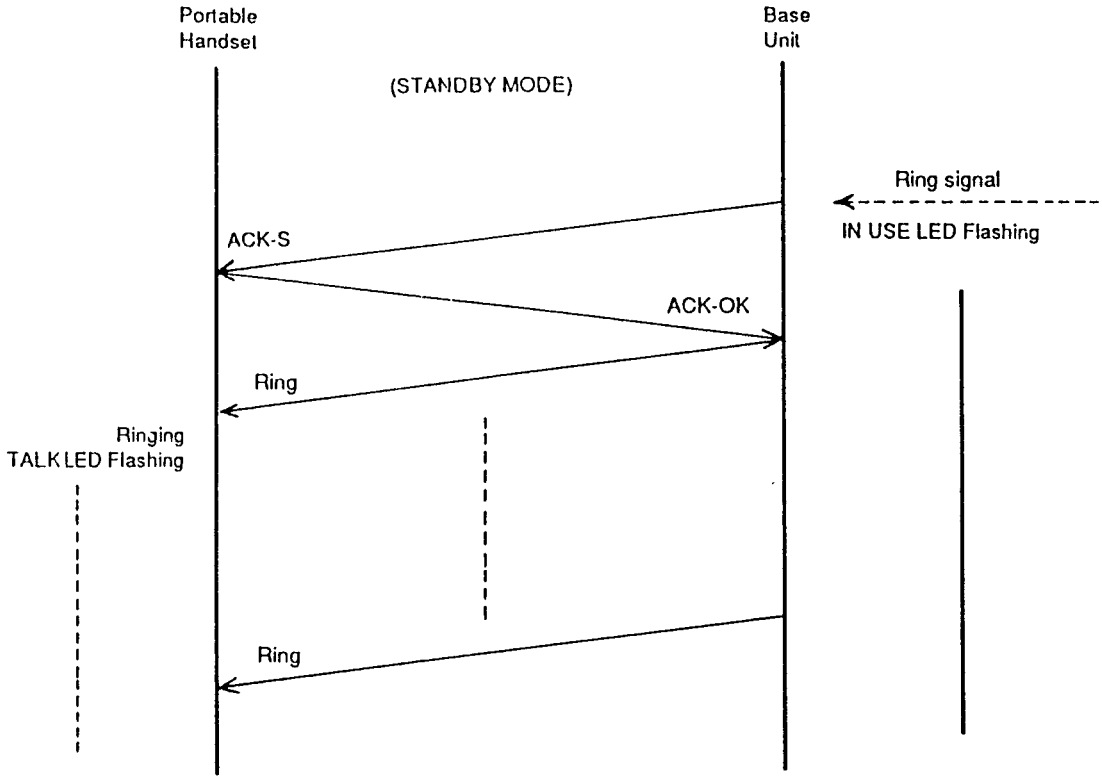


Fig. 20

After detecting the Ring signal from circuit, the Base Unit sends a LINK form requesting DATA (ACK-S) to the Portable Handset. When receiving this data, the Portable Handset returns a permitting DATA (ACK-OK) to the Base Unit. After receiving the returned DATA from the Portable Handset, the Base Unit sends a ring signal DATA (Ring), then the Portable Handset starts ringing.

4. Ports for transmitting and receiving of data

Portable Handset:	transmitting...43 Pin	receiving...33 Pin
Base Unit:	transmitting...32 Pin	receiving...33 Pin

5. Wave form of DATA used for cordless transmission and reception

The DATA which is transmitted from the Portable Handset to the Base Unit is combination of DATA 0, DATA 1, DATA Delimt, Pre data and End data of P1.
The DATA which is transmitted from the Base Unit to the Portable Handset is combination of DATA 0, DATA 1, DATA Delimt, Pre data and End data of P2.

PORTABLE HANDSET

Transmitting DATA Format

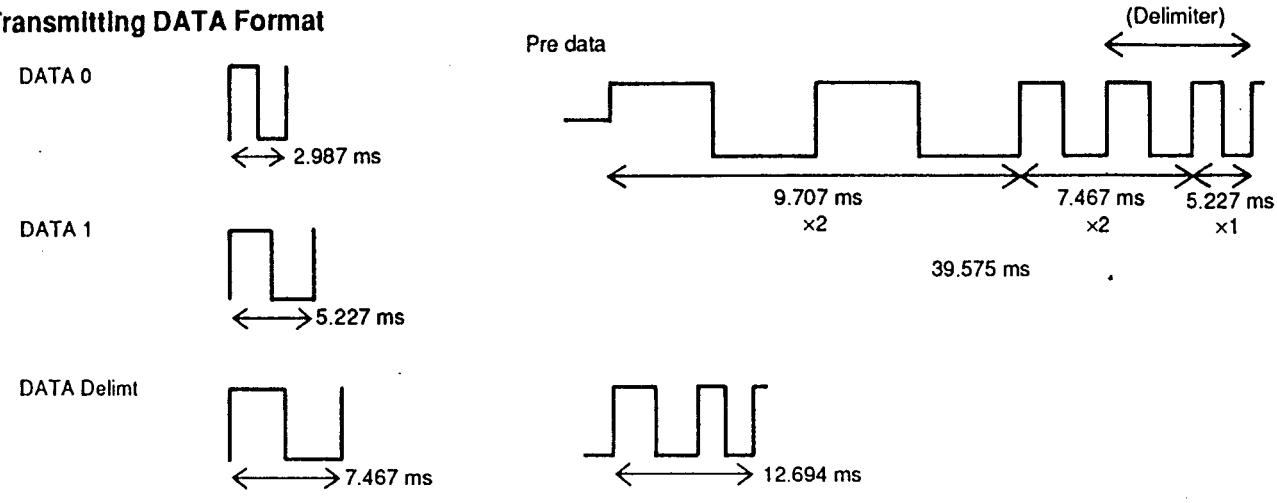


Fig. 21

BASE UNIT

Transmitting DATA Format

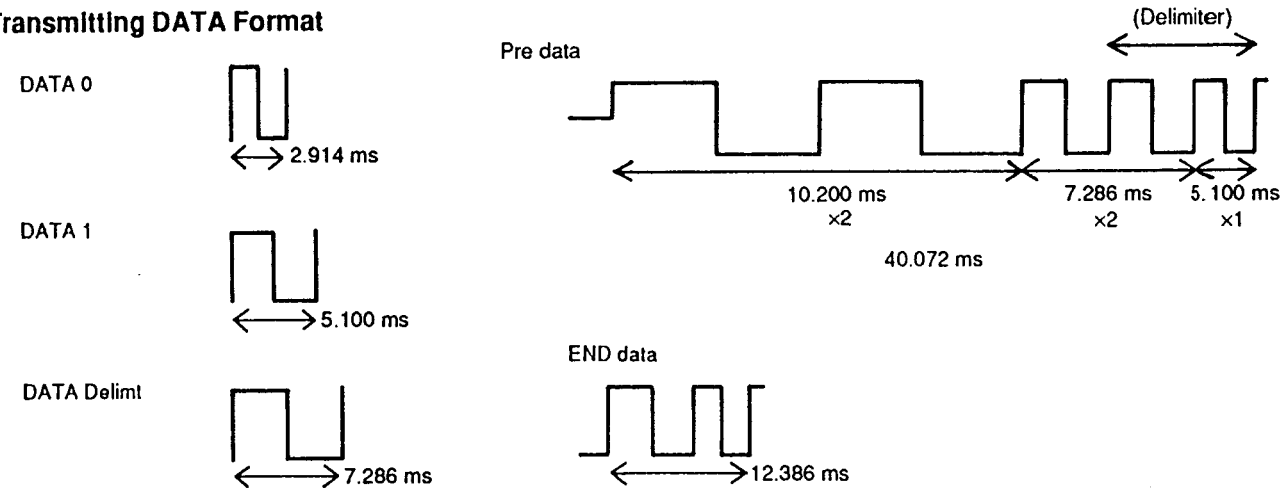


Fig. 22

6. When LINKing

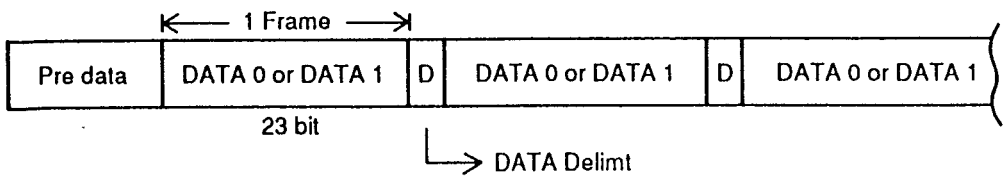


Fig. 23

When LINKing from the Portable Handset (when becoming STBY to TALK), DATA is transmitted in above format. The combined portion of DATA 0 and DATA 1 is transmitted in LINK requesting DATA format first. Then, when LINK OK (ACK-OK) DATA is returned from the Base Unit, it is sent as LINK form DATA after changing the combination of DATA 0 and DATA 1. And the DATA Delimt is between each Frame as a stop.
The contents of LINK requesting DATA and LINK form DATA are different depending on each operation.

7. Pulse Dial

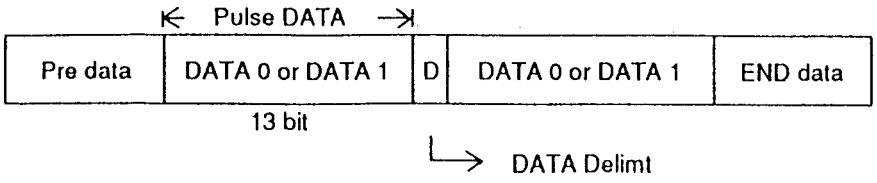


Fig. 24

When executing Pulse Dial, the Pulse Dial DATA is transmitted from the Portable Handset to the Base Unit in above format. The combination of DATA 0 and DATA 1 are changed by each Dial No. And the DATA Delimt is between each Frame as a stop.
The number of Frame is 2.

8. Tone Dial

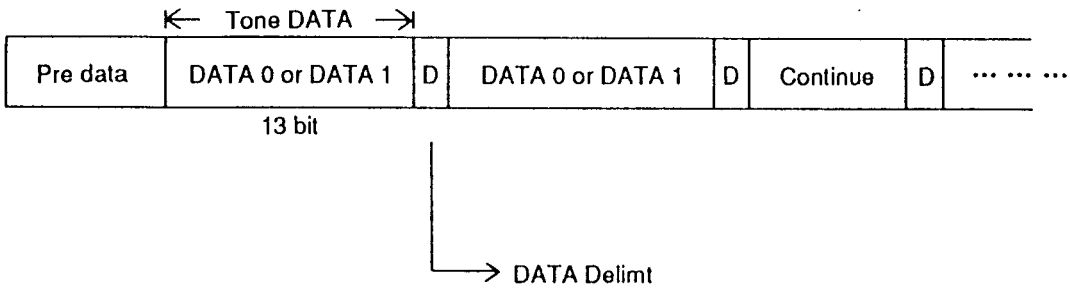


Fig. 25

When executing Tone Dial, Tone Dial DATA is transmitted from the Portable Handset to the Base Unit in above format. The DATA is changed by Dial No. as same as Pulse Dial. When Tone Dialing, DATA (Continue DATA) that the key is pressed continuously is sent to the Base Unit during the key is pressed. When depressing the key, the TONE Dial exterminating DATA (Tone end DATA) is sent, and the END data is sent finally.

NOTE

1,000 kinds of the security code are available for the model KX-T4330. Each time the portable unit is set on the cradle of the base unit (for charging), the CPU automatically change the security code.

BLOCK DIAGRAM (KX-T4330H)

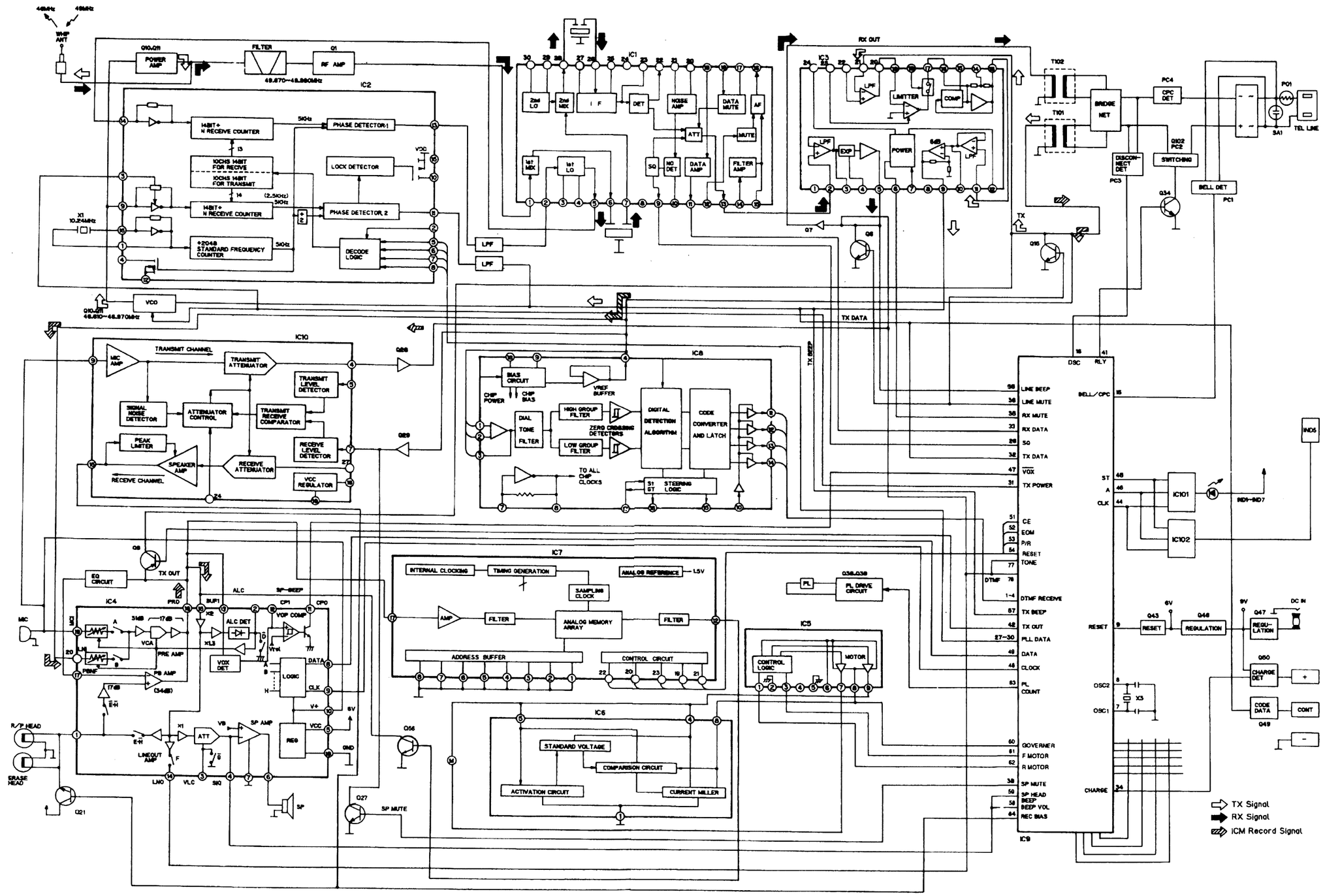


Fig. 26

BLOCK DIAGRAM (KX-T4330H)

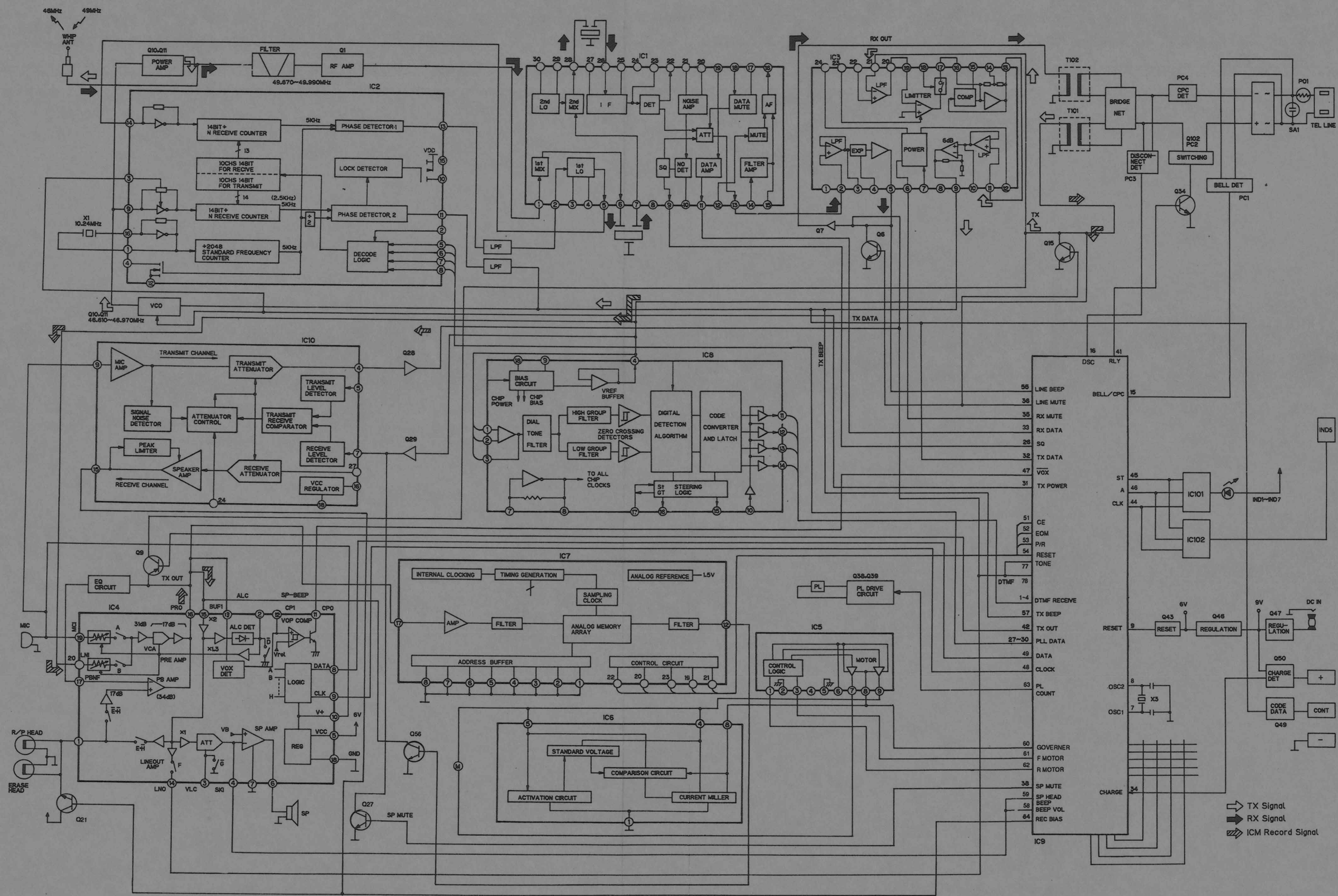


Fig. 26

NEW CIRCUIT OPERATION

■ GREETING MESSAGE RECORD/PLAYBACK CIRCUIT

1) Greeting Message Recording

The voice signal input from microphone enters the voice synthesizer LSI IC7 Pin 17. In the IC, the signal is stored in analog memory array in IC7. The control timing chart is shown in Fig. 27.

Mic→IC4 Pin 19→IC4 Pin 16→R82→C81→IC7 Pin 17

2) Greeting Message Playback

The voice signal stored in analog memory array in IC7 is output from Pin 12, the signal enters IC4 Pin 15 via Q56, and it is output to the speaker. The control timing is shown in Fig. 27.

IC7 Pin 12→C410→R419→Q56 Base→Q56 collector→C85→C408→R413→IC4 Pin 15→IC4 Pin 6→C513→Speaker

Timing Chart

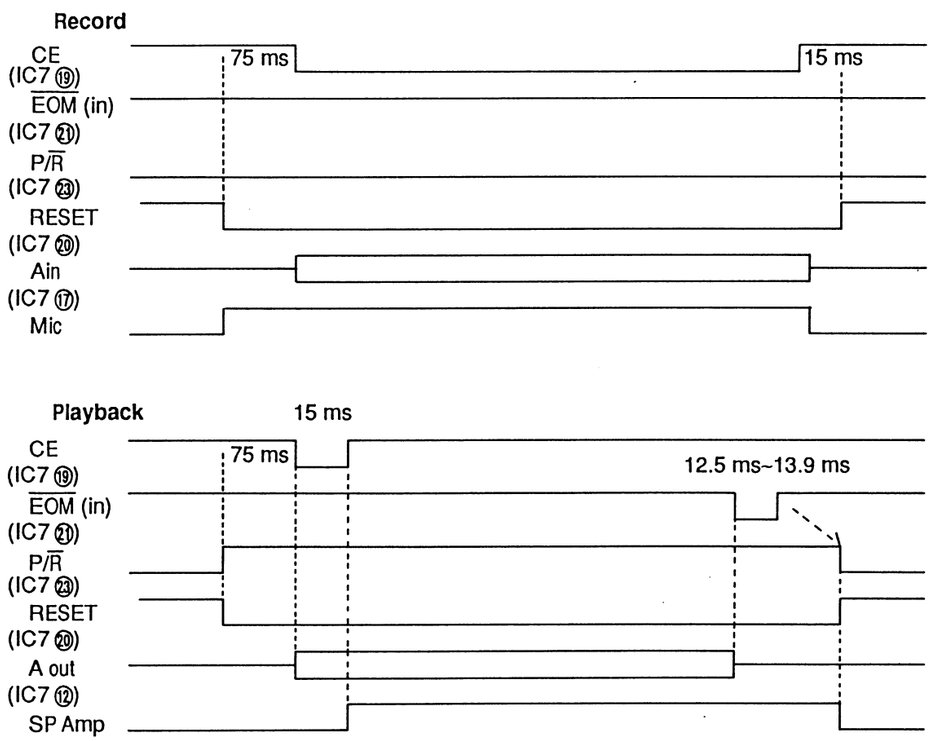


Fig. 27

Circuit Diagram

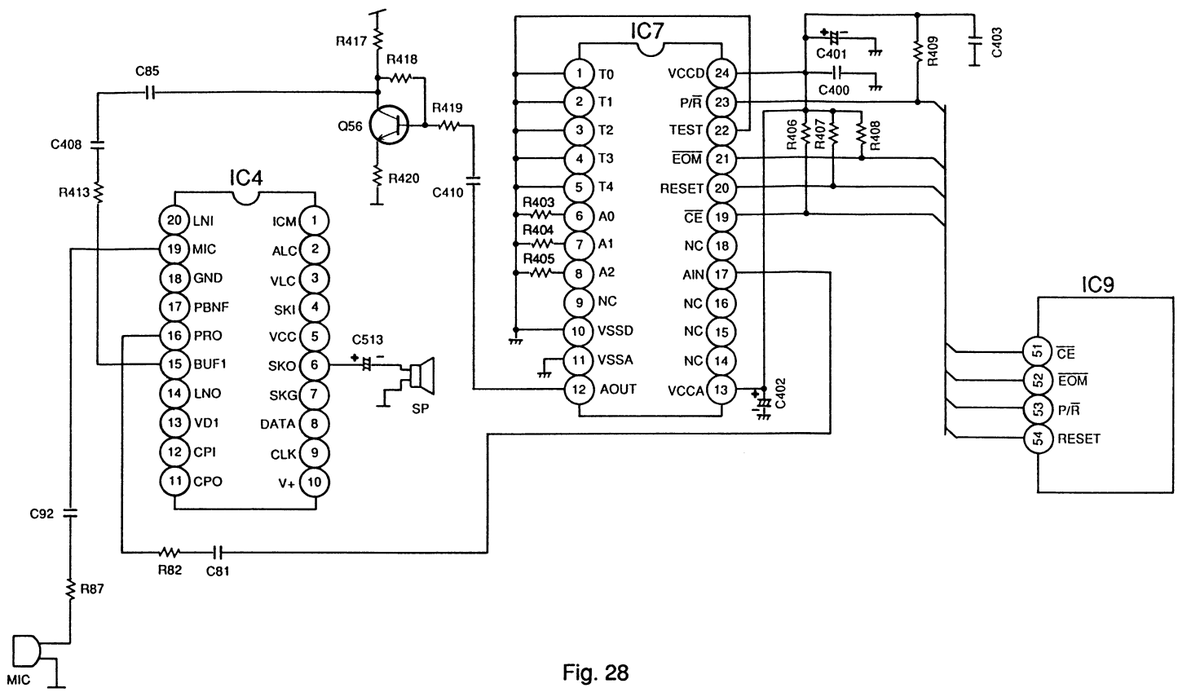


Fig. 28

CIRCUIT OPERATION (KX-T4330H)

■ TELEPHONE MODE OPERATION

When a ring signal enters from the Line

1) The ring detection circuit, i.e., the photocoupler PC1, begins to operate and its output is input to Pin 15 of IC9 (CPU).
2) To show the arrival of the ring signal to the portable handset, Pin 31 of IC9 enters into the transmit mode thus becoming a High and the ring data having the code set by Pin 32 of IC9 is sent to portable handset as a modulated output signal.
3) Upon receiving the ring data, and the portable handset is switched from standby to the talk mode, the base unit receives a carrier modulated by the data indicating a switch from standby to talk. This data is then demodulated at the base unit and passes through a data signal amplifier of IC1, This signal is then inputted to Pin 33 of IC9, activating Q34 via Pin 41 of IC9 which causes Q102 and PC2 to release the muting, and enable talk.

Circuit-making from the portable handset

1) When the operator of the portable handset presses the talk button, data is transmitted the base unit, this data is then demodulated by the base unit and passed through data signal amplifier of IC1 and enters Pin 33 of IC9.
2) When the codes coincide, Pin 41 of IC9 becomes a "High". At this time the transmit condition is enabled and the muting is cancelled via Q34, and the photocoupler PC2 is turned on.
3) Further, and IN USE signal is sent out from Pin 46 of IC9, then the signal is inputted to Pin 1 of IC102, is outputted from Pin 10 of IC101, thus dimly lighting the IN USE/INTCOM LED (IND7).

Circuit Diagram

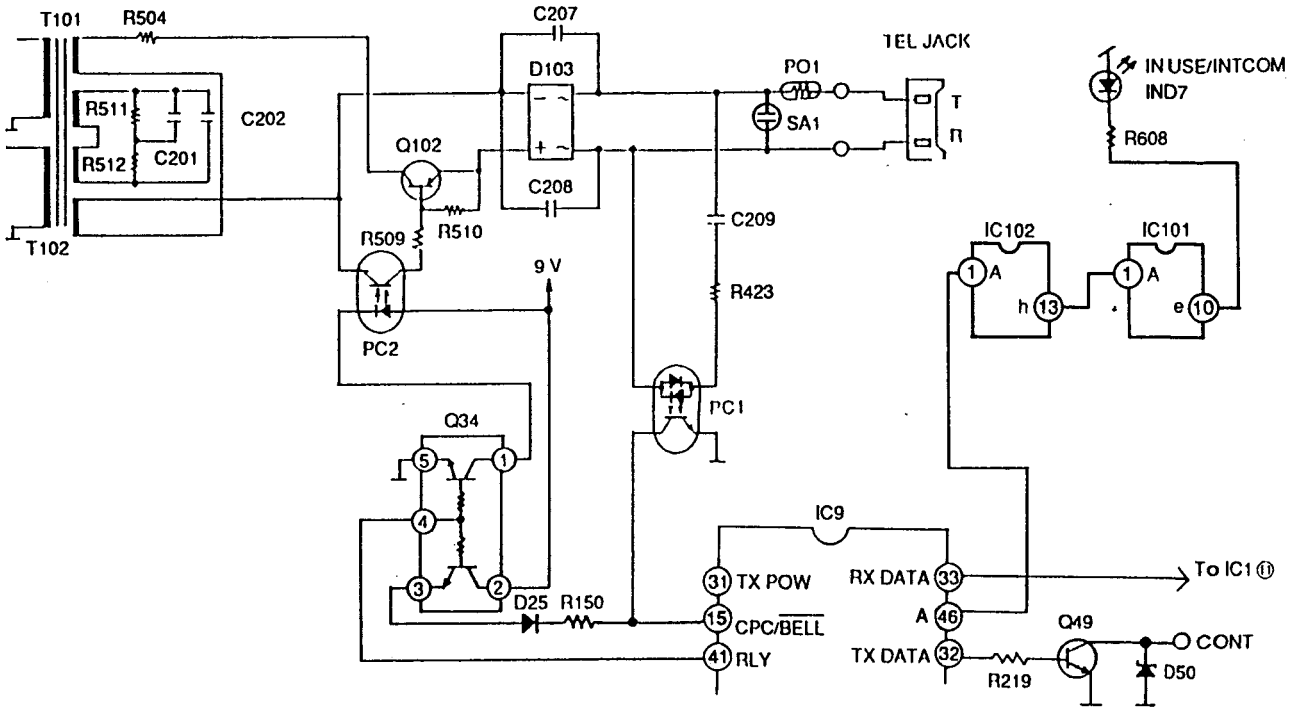


Fig. 29

■ INITIALIZATION CIRCUIT

Function:

This circuit is used for initializing the microcomputer when the AC adaptor is connected.

Circuit Operation:

When the unit is switched ON. Then the voltage is shifted by D46 and power is supplied to the CPU.
The voltage needed to reset the CPU is supplied from the collector of Q43.
When Q43 turns ON the reset terminal voltage drops. The CPU has been reset, and the unit can operate beyond point Ⓐ in the circuit voltage diagram.

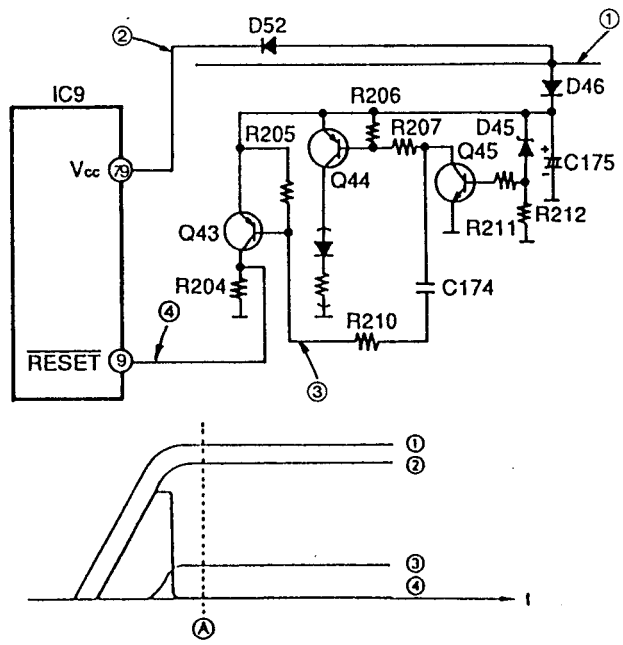


Fig. 30

■ SPEAKERPHONE OPERATION

When the ring signal is received

1. When the ring signal is received from line, photocoupler PC1 operates, the output enters Pin 15 of IC9 (CPU), Pin 31 of IC9 goes High, and the system goes into the Send mode. Also, Pin 39 of IC9 goes Low, activating IC10 (speakerphone).
   Next, Pins 77 to 78 of IC9 output the monitor tone which enters Pin 19 of IC10 and is then output from the speaker.
   Subsequently, the same operation as for Line takes place.
   Next, when the speakerphone switch is turned ON, the line in which the ring is ringing is selected, and Q34, goes ON, causing the line to be selected.

Circuit Diagram

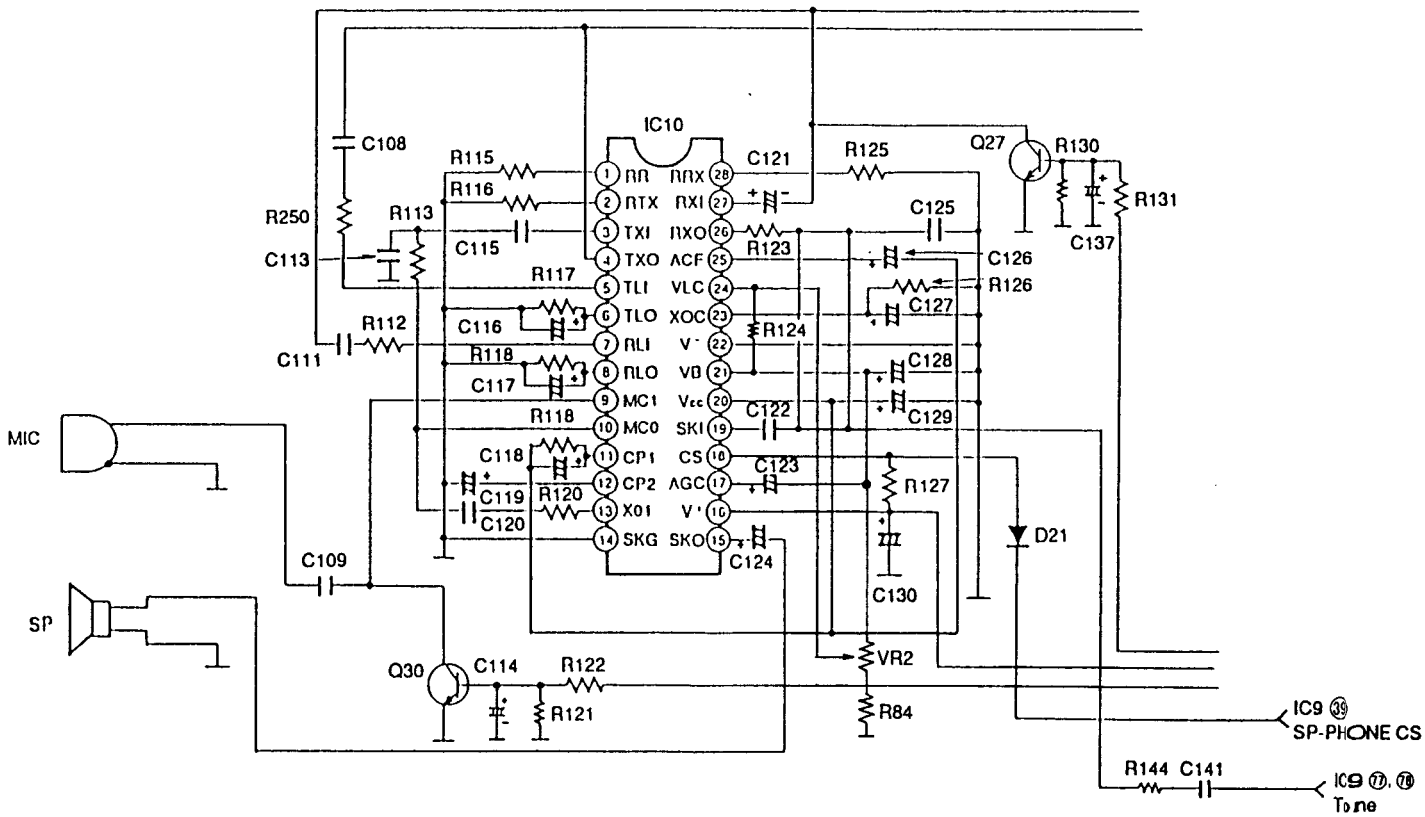


Fig. 31

■ INTERCOM MODE

1) When the base unit PAGE/INT button is pressed, a call monitor signal of 1.95 kHz (intercom sound) is output from Pin 58 of IC9 becomes "LOW". Thus a monitor tone is heard from the speaker.

2) At the same time, Pin 31 of IC9 goes "High", and the transmission state is reached. Then the modulated data signal is output from Pin 32 of IC9, Flashing of the INTERCOM LED (IND7) is obtained from Pin 46 of IC9. This status is called "Intercom stand-by".

3) Operating the intercom is possible from the portable handset as described below. When the PAGE/INT button of the portable handset is pressed with the portable handset in the stand-by mode, a radio wave is transmitted from the portable handset. This signal is received by the base unit, detected and sent as an output at Pin 11 of IC1. This wave shaped signal is entered at Pin 33 of IC9 as data to be analyzed by the CPU (IC9). Speaker muting is cancelled by a change of Pin 38 of IC9 from a HIGH to a LOW, thus a monitor tone is output from Pin 58 of IC9. This monitor tone is amplified by IC4 and can be heard from the speaker. At the same time, the INTERCOM LED (IND7) is made to flash via Pin 46 of IC9. Thus microphone and speaker muting are cancelled by Pin 38 of IC9, enabling the microphone and speaker amplifiers to operate, thus intercom calls become possible.

4) When a ring signal arrives from the line during an intercom call, a ring monitor signal flows from Pin 58 of IC9 to the speaker. However this monitor tone is not transmitted to the portable handset.

■ CHARGE DETECT CIRCUIT

When the battery in the portable handset is charged, the voltage at the (+) charging terminal changes from 9 V→5 V (Fig. 33 Ⓐ), and Q50 goes ON (Fig. 33 Ⓑ). As a result, 6 V is supplied to the emitter of Q50, the CHARGE LED lights, and the CHARGE mode is input to pin 34 of IC9.
This CHARGE input is received by CPU IC9, making Pin 32 active, and the DATA signal is sent to the portable handset by the control terminal via Q49.

Circuit Diagram

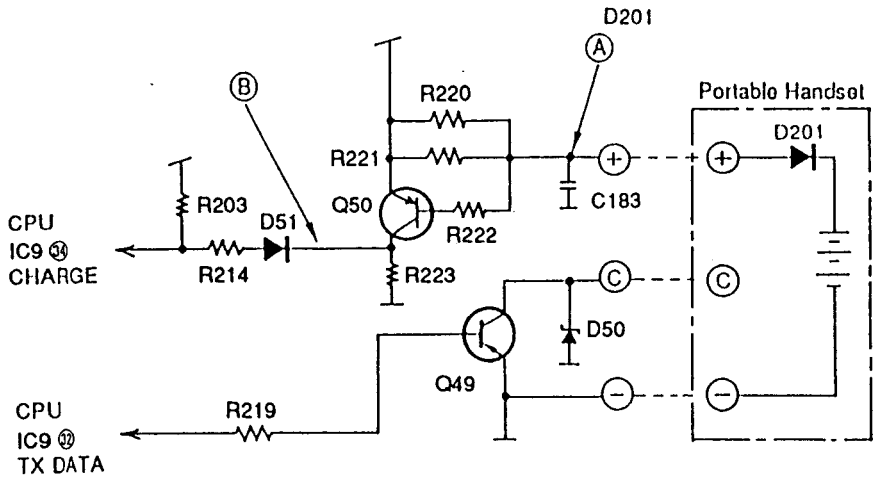


Fig. 32

Timing Chart

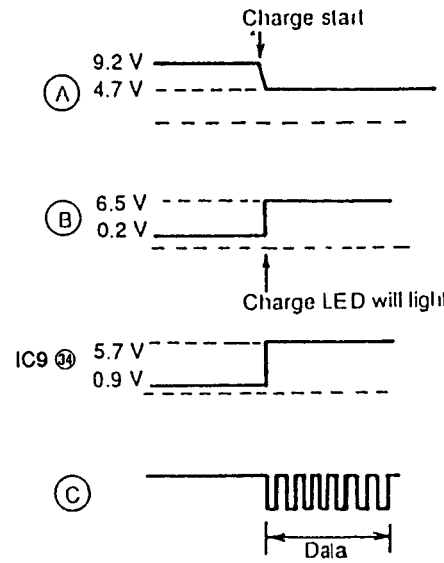


Fig. 33

■ CHARGE MODE

When charging the portable handset on the base unit, CH, ID codes are sent from the CONT terminal to the portable handset, and current is supplied to the portable handset from the battery charge contacts via Q50. When the output of Q50 is input to Pin 34 of IC9 (CPU) through D51, R214 the base unit enters into charge mode and the CHG LED (IND4) lights up.

Circuit Diagram

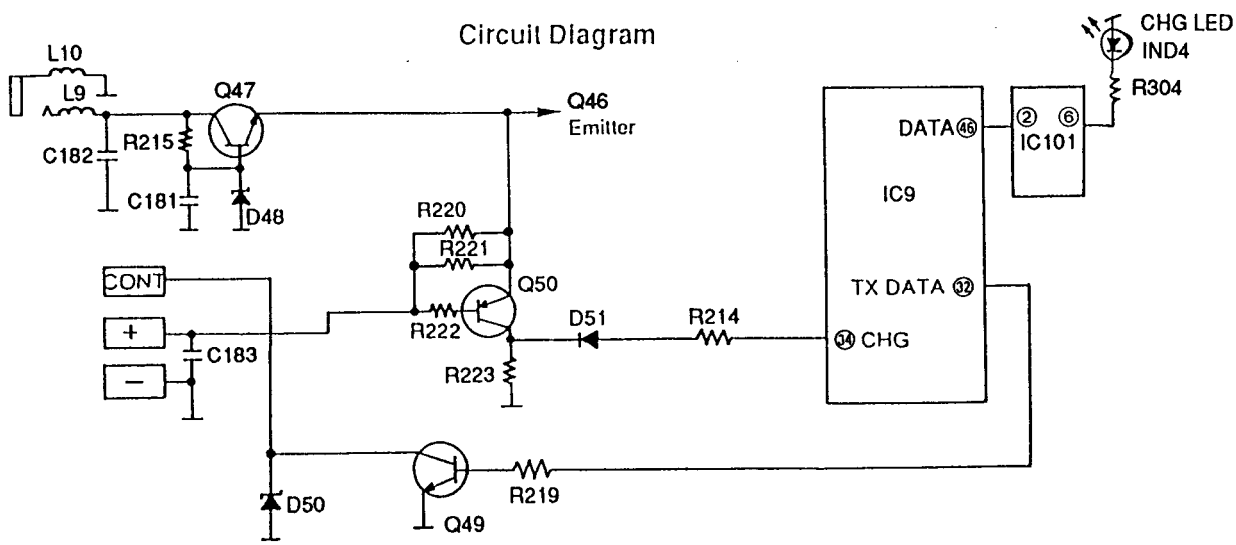


Fig. 34

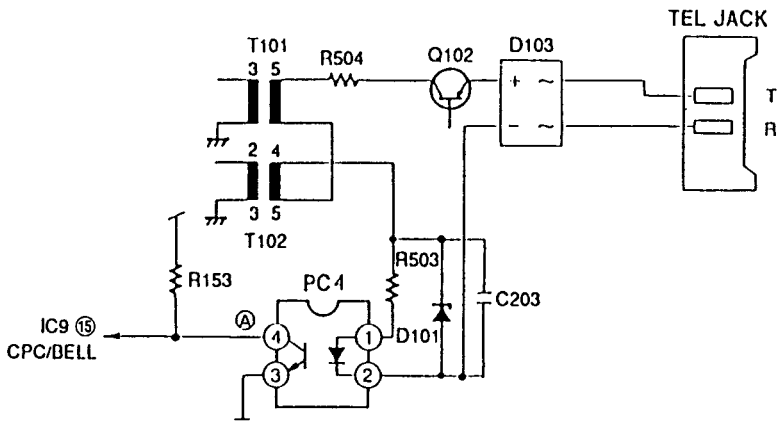
- Set up of the portable handset

When charging the portable handset on the base unit, the data signal is sent from CONT terminal to portable handset. The Q49 switching are affected by Pin 32 of IC9, the sending data are CH data, ID code, tone or pulse signal etc. While charging, these data kept sending. The CPU of portable handset is operated irrespective of on or off of power switch, and these data are received to the CPU.

■ CPC (CALLING PARTY CONTROL) DETECTOR CIRCUIT

Function:
The CPC DETECTOR complements the units shut off, in the ANSWER mode, after the caller hangs up. At this time, the CPC DETECTOR takes over.
The CPC DETECTOR senses the temporary disconnection of the telephone line which occurs after the caller hangs up.
Circuit Operation:
When off-hook, the DC current of telephone line flows as follows:
T→D103→R504→T101→T102→R503→PC4→D103→R
When in the off-hook mode, the collector of PC4 is at Low level.
If an instant break down of the telephone line occurs, the collector of phototransistor goes to a high level from a low level. (The CPC detector is designed for the instant break down of more than 8 msec. or 600 msec.)

Circuit Diagram



CPC Switch (SW4)

	A	B
OK	more than 8 ms	more than 600 ms
NG	less than 5 ms	less than 350 ms

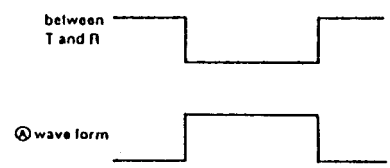


Fig. 35

■ ICM MESSAGE PLAYBACK CIRCUIT

Circuit Operation:
The playback signal for ICM MESSAGE is selected by IC4.

ICM R/P→C91→Pin 1 of IC4→Pin 15 of IC4→R91→C94→Pin 16 of IC4→Pin 6 of IC4→C513→SPEAKER.

Circuit Diagram...See page 39.

■ ICM MESSAGE RECORD CIRCUIT

Circuit Operation:
(Recording signals)
Recording signal from the telephone line or MIC is selected by IC4.
The recording signal flows as follows:
Mic→C92, R87→IC4 Pin 19→IC4 Pin 15→R91→C94→IC4 Pin 16→IC4 Pin 1→C91→ICM Head
↑
Tel line→R95, C88→IC4 Pin 20

(Signal)
The beep tone is generated by IC9.
The beep tone of the ICM recording (from Pin 56 of IC9) is processed in the ICM recording head via C107 and R105.

(Erase)
When in the Rec mode, Pin 14 of IC9 is High.
The voltage is applied to the Erase Head, thus the Erase Head is activated.
The bias current is applied to the R/P Head via Q21 and R100.
The DC current flow is as follows;
6 V DC→Q21 turns ON (by High level of IC9 Pin 14)→Q21 collector→Q21 emitter→Erase Head.

Circuit Diagram

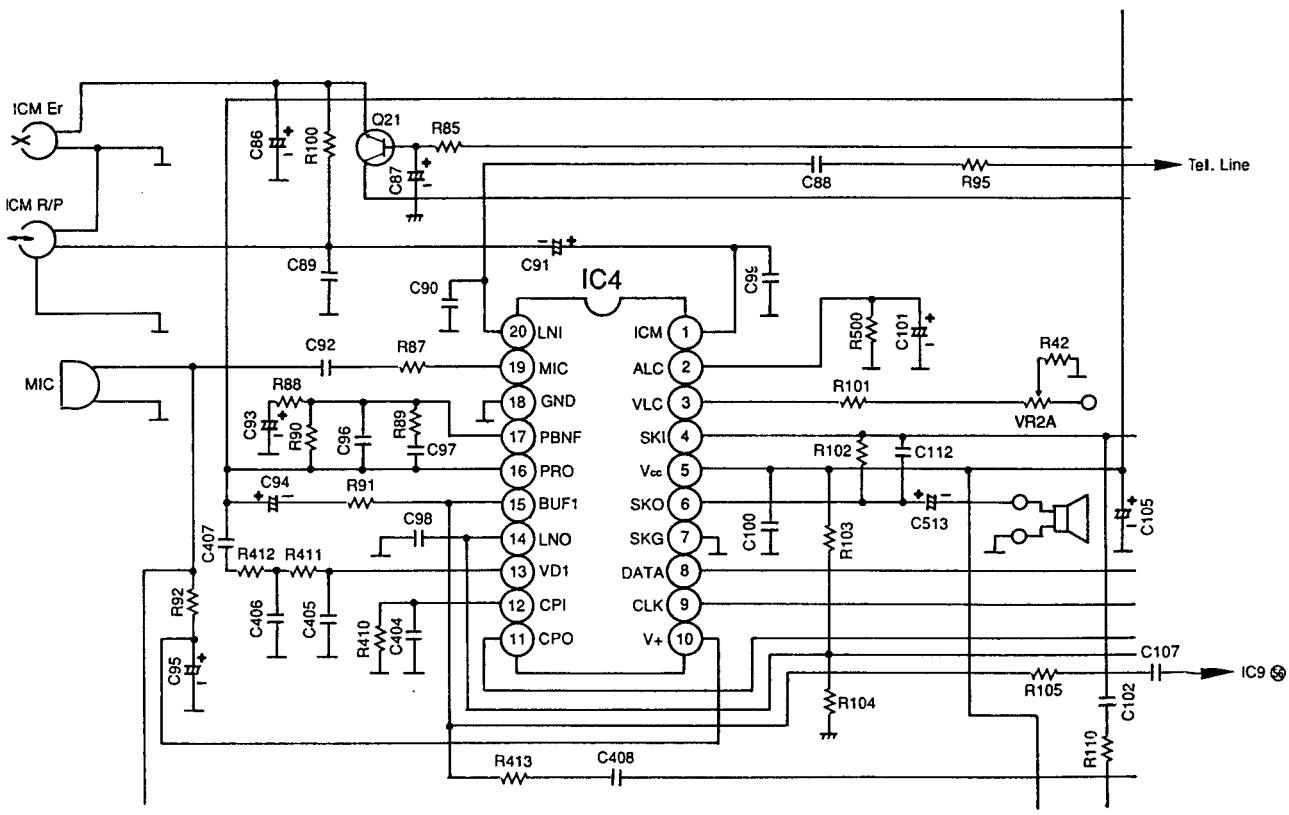


Fig. 36

■ MOTOR DRIVE CIRCUIT

Playback (or Recording)
When Pin 60 of IC9 becomes "L" and Q37 OFF. And then the motor voltage supplied from IC5 changes to the voltage on playing. When Pin 60 of IC9 becomes "L" Q37 OFF, the governor (IC6) is activated and the motor voltage is regulated, hence the motors rotate at a constant speed.

Fast Forward
Pin 61 of IC9 "H"→IC5 Pin 3 "H"→IC5 Pin 9 "H", and the motor current flows through IC5 Pin 9→Motor and the motor rotates at high speed.

Rewind
When Pin 62 of IC9 becomes "H", IC5 Pin 1 "H"→IC5 Pin 7 "H", and the motor current flows through IC5 Pin 7→Motor→IC5 Pin 9. Because this is the reverse direction to the current which flows in the above Fast Forward mode, the motor rotates at high speed in the reverse direction.

Circuit Diagram

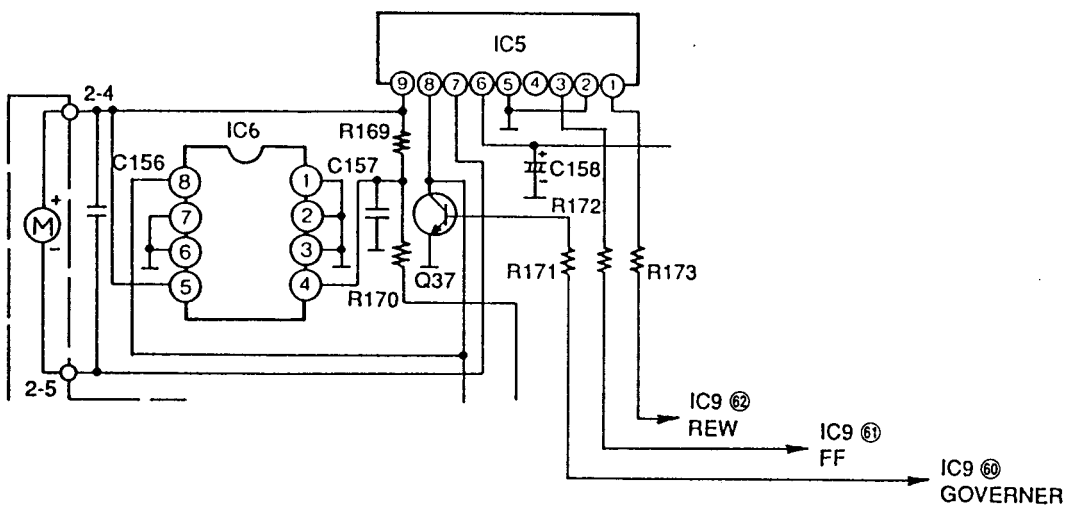


Fig. 37

■ ICM MESSAGE TAPE ROTATION DETECTOR CIRCUIT

Circuit Operation:
When there are changes in the direction of the magnetic field caused by the rotation of the four-pole ferrite magnet, they are detected by the Reed Switch. This output is added to the CPU input.

Reed Switch (S100)→R182→IC9 ⑦② (ICM)

Circuit Diagram

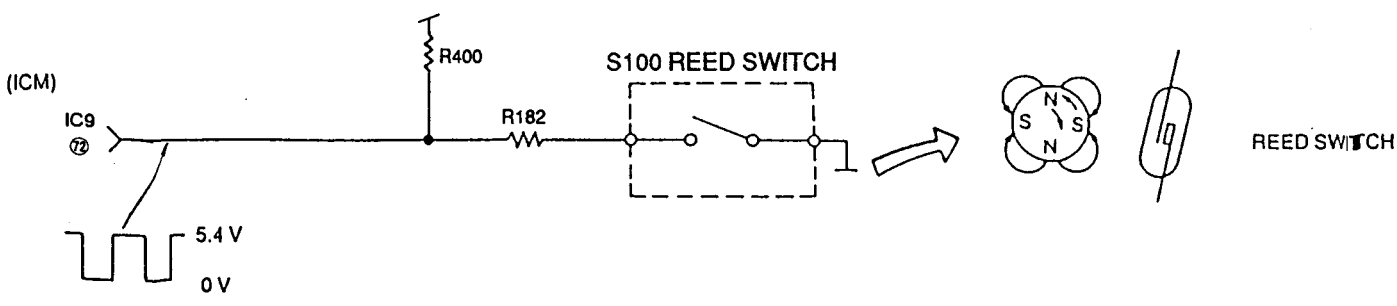


Fig. 38

■ MONITOR CIRCUIT AND SPEAKER MUTE CIRCUIT

Circuit Operation:
The monitor signal flow is as follows:
The Line signal and Head signal are amplified by IC4 in each mode. Then these signals appear at IC4 Pin 7.

Pin 16 of IC4→C94→R91→Pin 15 of IC4→Pin 6 of IC4→C513→SPEAKER.

The speaker beep tone path: IC9 Pin 56→C107→R105→Pin 15 of IC4→Pin 7→C513→Speaker.

Circuit Diagram

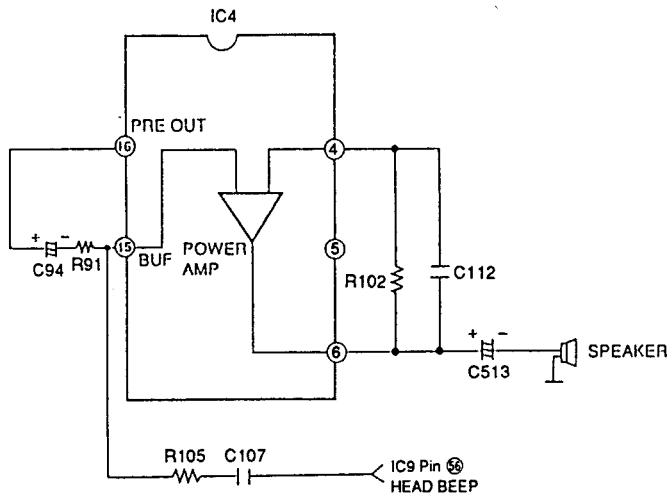


Fig. 39

■ VOX CIRCUIT

Function:
The VOX circuit is designed to detect cyclic signals in which the signal is ON for 100 msec. to 1 sec, continuous sounds and no sound at all.
After detection, the CPU issues an instruction that makes VOX operation possible.
This means that when a telephone call has ended, the phone is reset and is ready to receive the next call.

Circuit Operation:
A signal output from terminal Pin 16 of IC4 passed through C84, R94 and inputted to Pin 13 of IC4→Pin 12 of IC4→Pin 47 of IC9.
When sound is present, the output at Pin 12 of IC4 becomes a low level, while no-sound its output becomes a high level.

Circuit Diagram

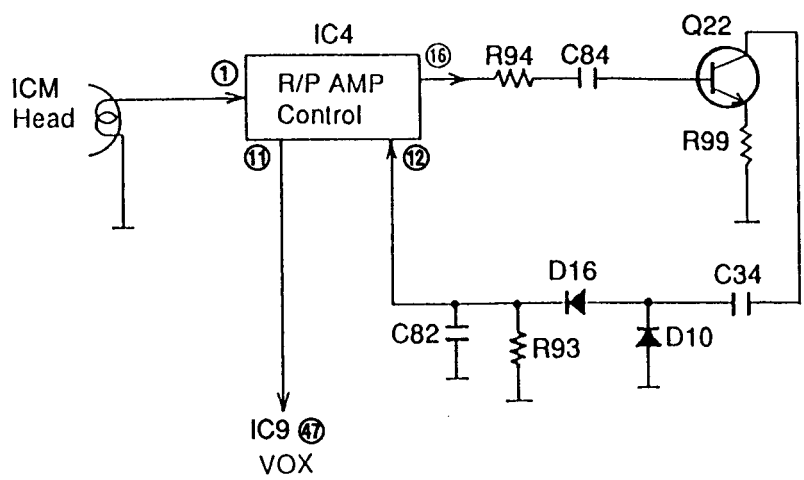


Fig. 40

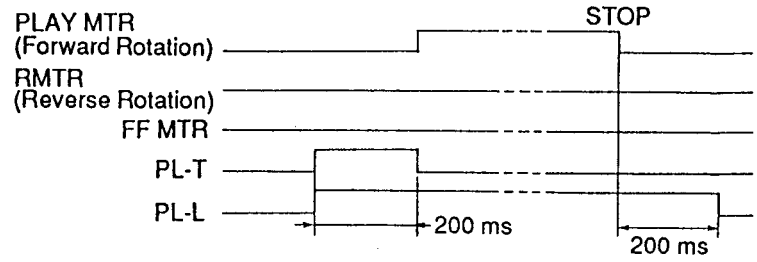
■ TAPE TRANSPORT CONTROL

Circuit Operation:

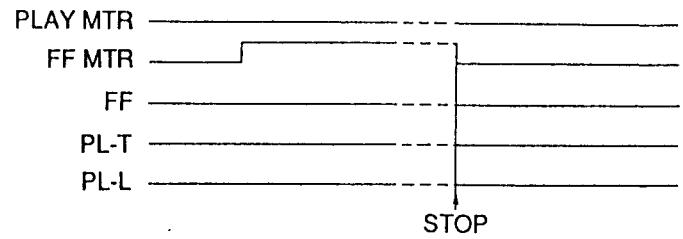
The timing for the plunger and motor which are used to operate the deck is as shown in the timing chart.

Timing Chart

1 PLAY REC MODE



2 REW MODE



3 FF MODE

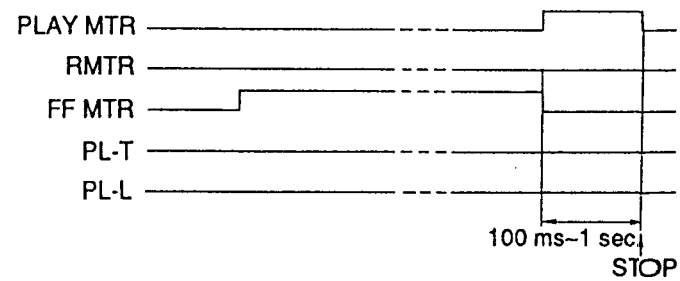


Fig. 41

■ REMOTE SIGNAL DETECTOR CIRCUIT

Circuit Operation:

A remote control signal is activated by a dual-tone multiple-frequency (DTMF) signal.
The remote signal output from the telephone line is amplified by IC5, via Q6. And it is input to Pin ② of IC8 after it passes through the bandpass filter.
The DTMF signal is input to IC8 and is changed to a 4 bit code that is input to IC9.

Circuit Diagram

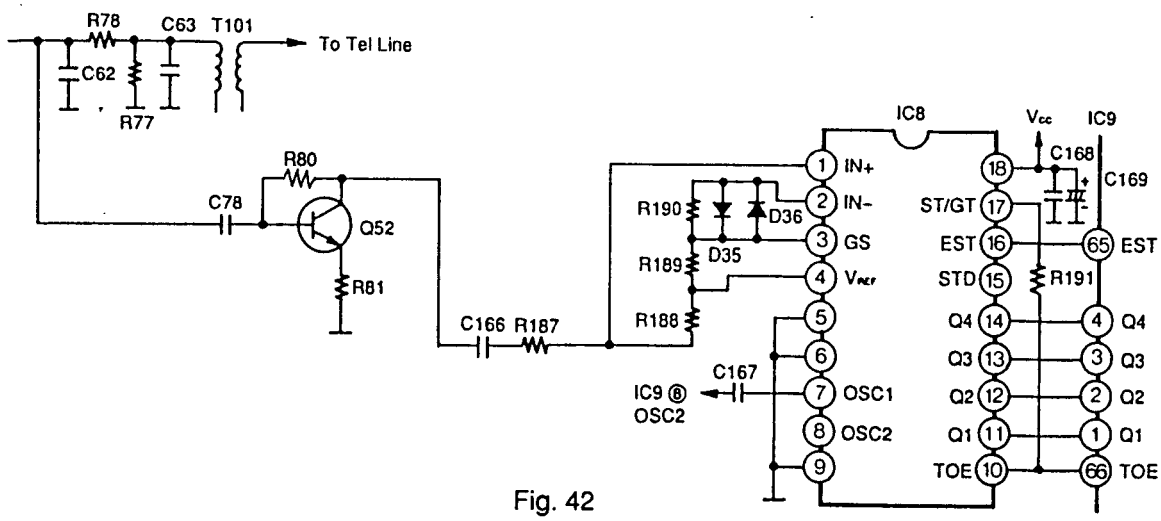


Fig. 42

■ POWER SUPPLY CIRCUIT

Function:
Power from the AC adaptor passes through a 2-stage regulating block consisting of Q47 and Q46 and provides system voltages of 5.4 and 6 V.

Circuit Operation:
Power from the AC adaptor is supplyed directly to the plunger. Q47 is a regulated power supply. The voltage at point Ⓑ is regulated to 9 V by the zener voltage of D48→Amp power. Q46 is a regulated power supply. The voltage at point Ⓒ is regulated to 6 V by the zener voltage of D47. The 6 V voltage is dropped by D52 to 5.4 V.

Circuit Diagram

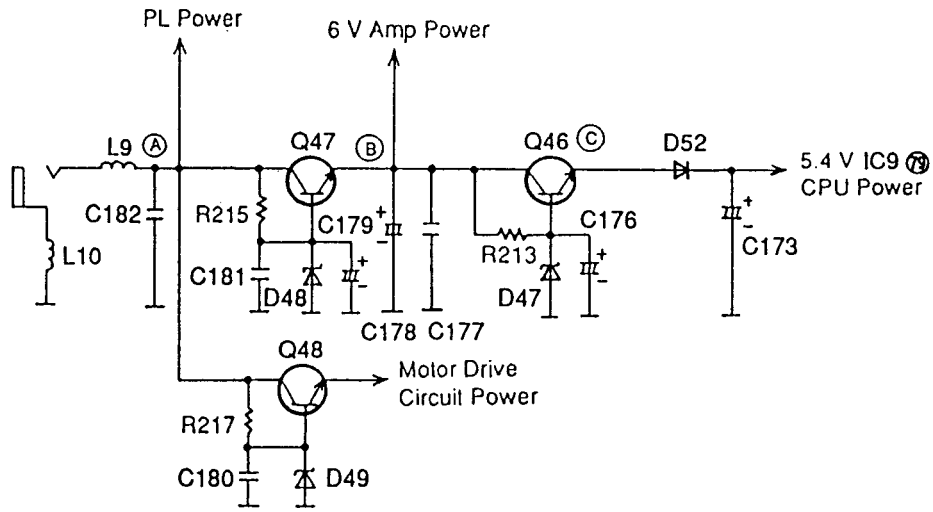


Fig. 43

■ CPU OPERATION

1. TEL MODE AND INTERCOM MODE

CPU Terminals / Operation Mode	27–30 CH DATA	31 TX POW	32 TX DATA	36 L MUTE	38 SP MUT	41 TR-RLY	58 BEEP
STANDBY	L or H	L	H	H	H	L	L
TALK	FIXED	H	H	L	H	H	L
INTERCOM	FIXED	H	H	H	L	L	L
4330R→4330H Paging	FIXED	H	DATA OUTPUT	H	L	L	⎍⎍
4330R→4330R Ring	FIXED	H	DATA	H	H	L	L
4330H→4330R Paging	FIXED	H	DATA	H	L	L	⎍⎍
CHARGE	L or H	L	H	H	H	L	L
CH Changing (INTCOM)	L or H	L	—	H	H	L	L
CH Changing (TALK)	L or H	L	—	H	H	H	L

2. TIMING OF IC9 (CPU) OUTPUT PORT WITH THE BASE UNIT IN PAGE/INT' MODE

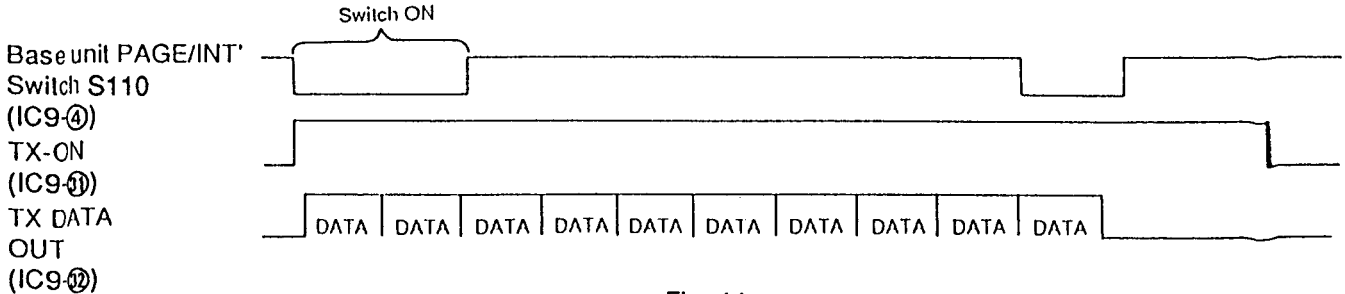


Fig. 44

3. WHEN PRESSING THE TALK SWITCH OF THE PORTABLE HANDSET

4. WHEN SETTING THE ON/OFF SWITCH OF THE PORTABLE HANDSET TO OFF

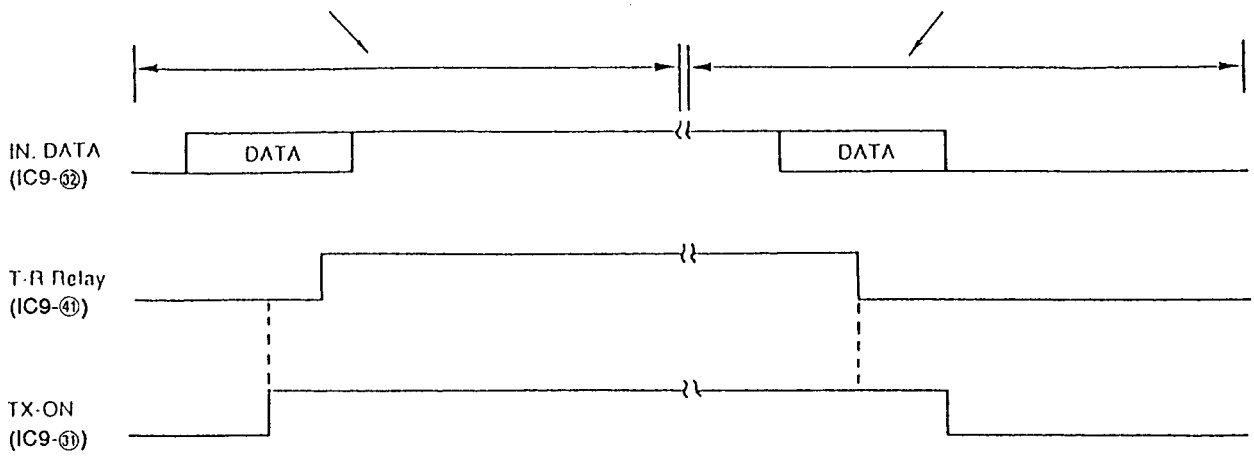


Fig. 45

5. RESONANCE PREVENTION CIRCUIT

Circuit Diagram

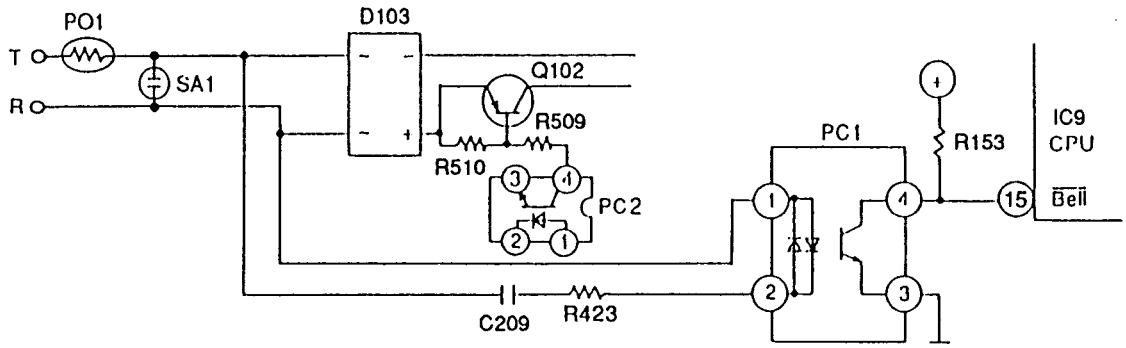
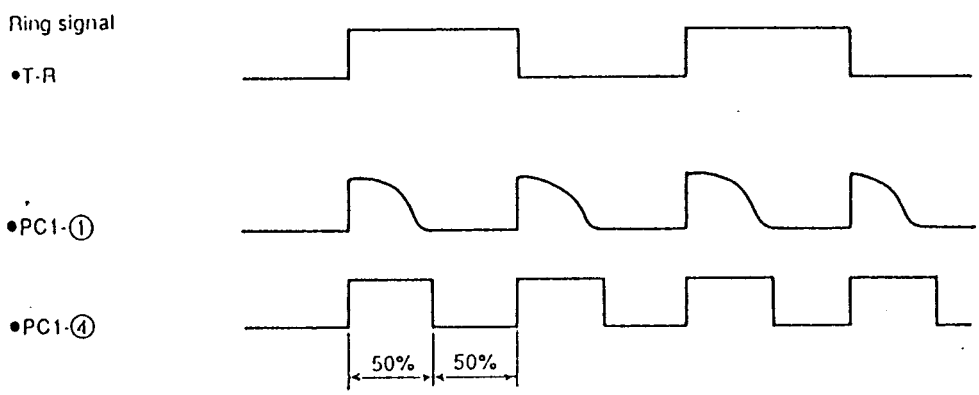


Fig. 46



Make/break ratio when dialing with the Portable handset: 40%: 60%
High/low ratio upon ring signal: 50%: 50%
Therefore, if the low/high ratio is greater than 45% at IC9-⑮(CPU), it is judged as a ring signal. See Fig. 46.

6. EXPLANATION OF THE RECEIVE CIRCUIT

6-1. Signal Flow

Circuit Diagram

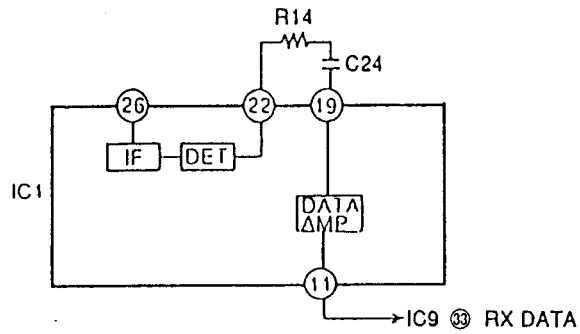


Fig. 47

In areas where the transmission power from the portable handset is extremely weak, noise is superimposed on the data and the chance of an error can become extremely great upon reception of the data. To help prevent this, the above circuit is used.

7. EXPLANATION OF THE TRANSMIT CIRCUIT

The voice signal or data signal sent to the portable handset is applied to the cathode of variable capacitor diode D3, as shown in Fig. 48.

Circuit Diagram

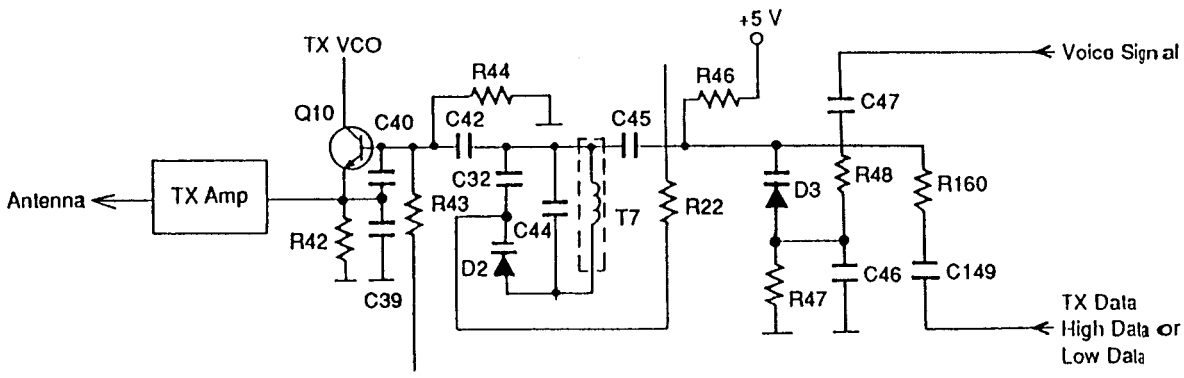
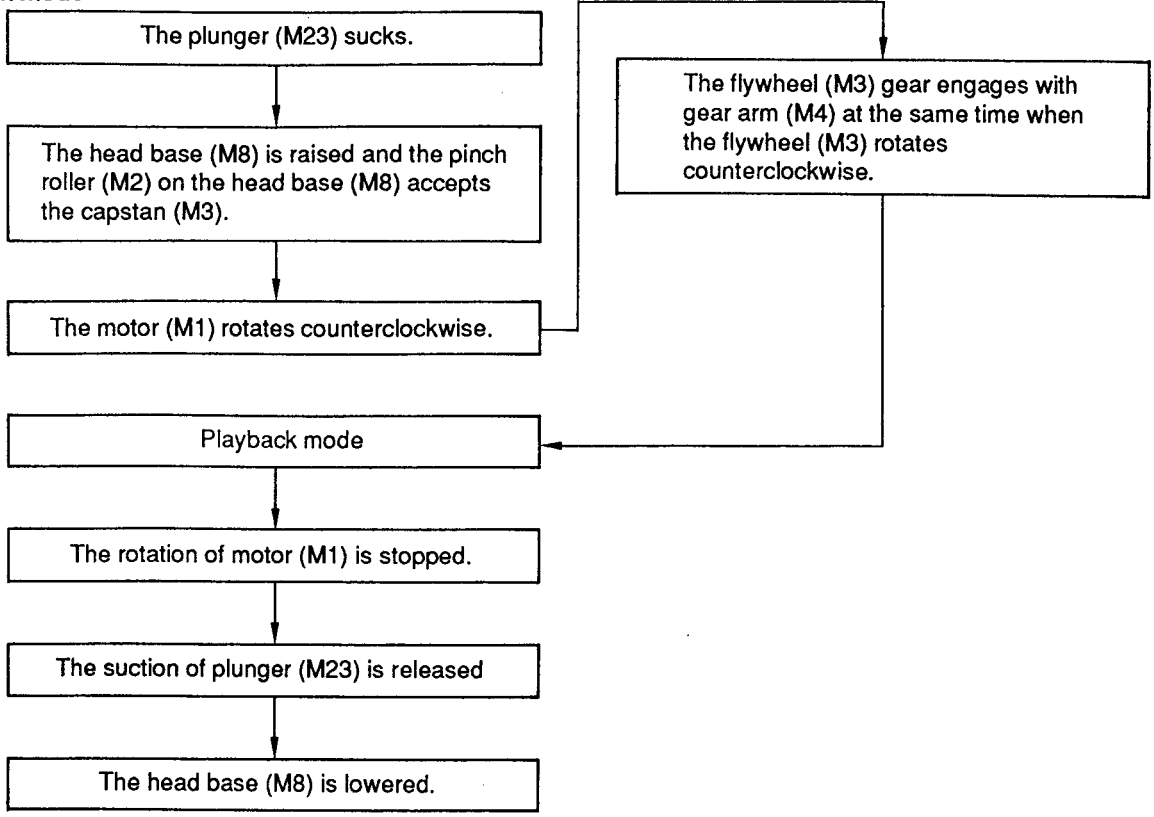


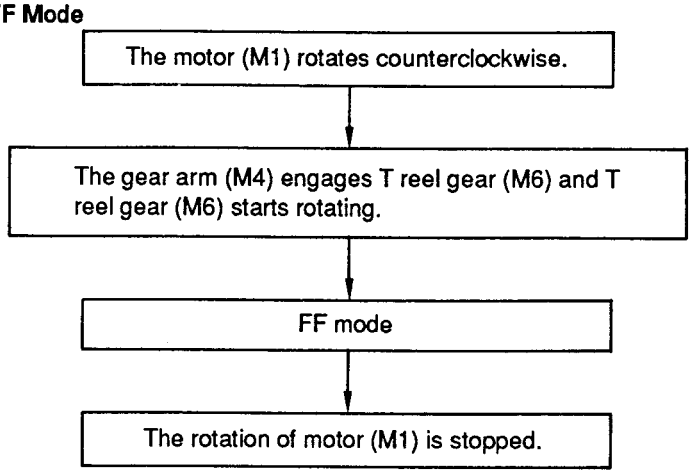
Fig. 48

FLOW CHART FOR CASSETTE DECK

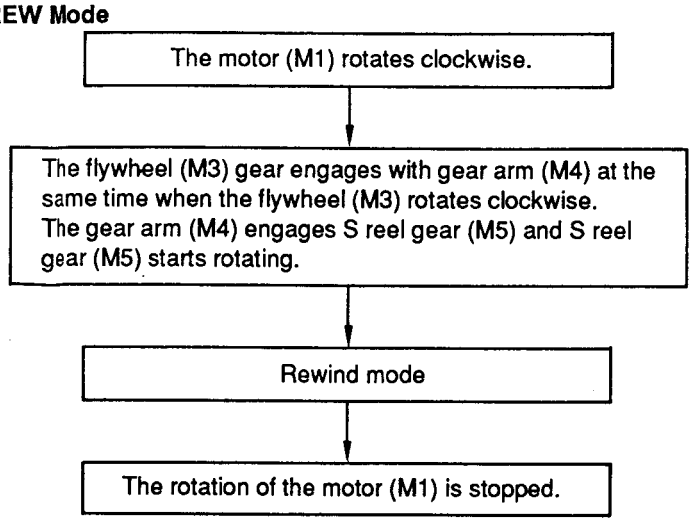
Playback mode



FF Mode



REW Mode



Top View

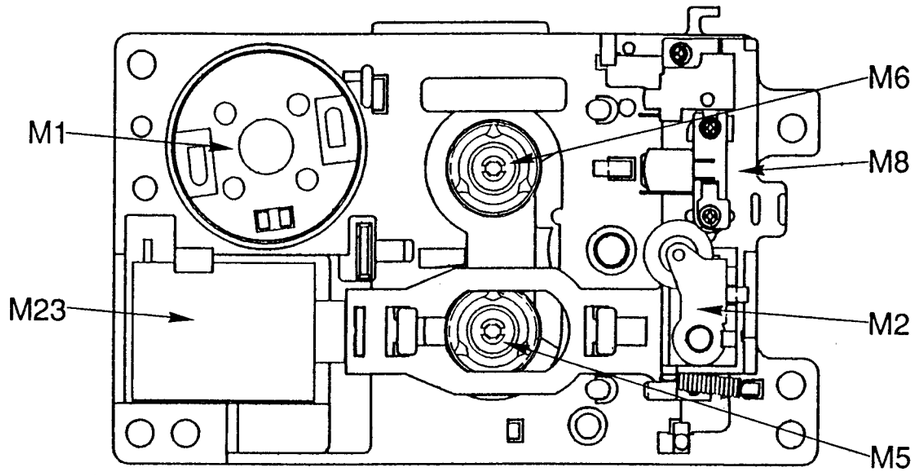


Fig. 49

Bottom View

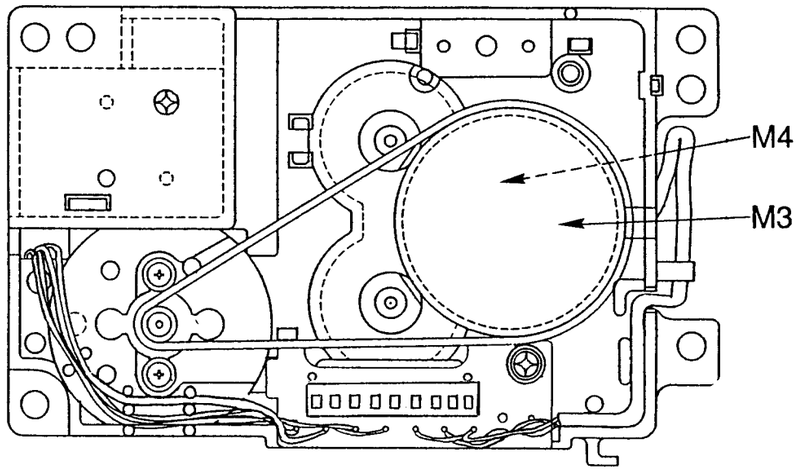


Fig. 50

CASSETTE DECK PARTS LOCATION

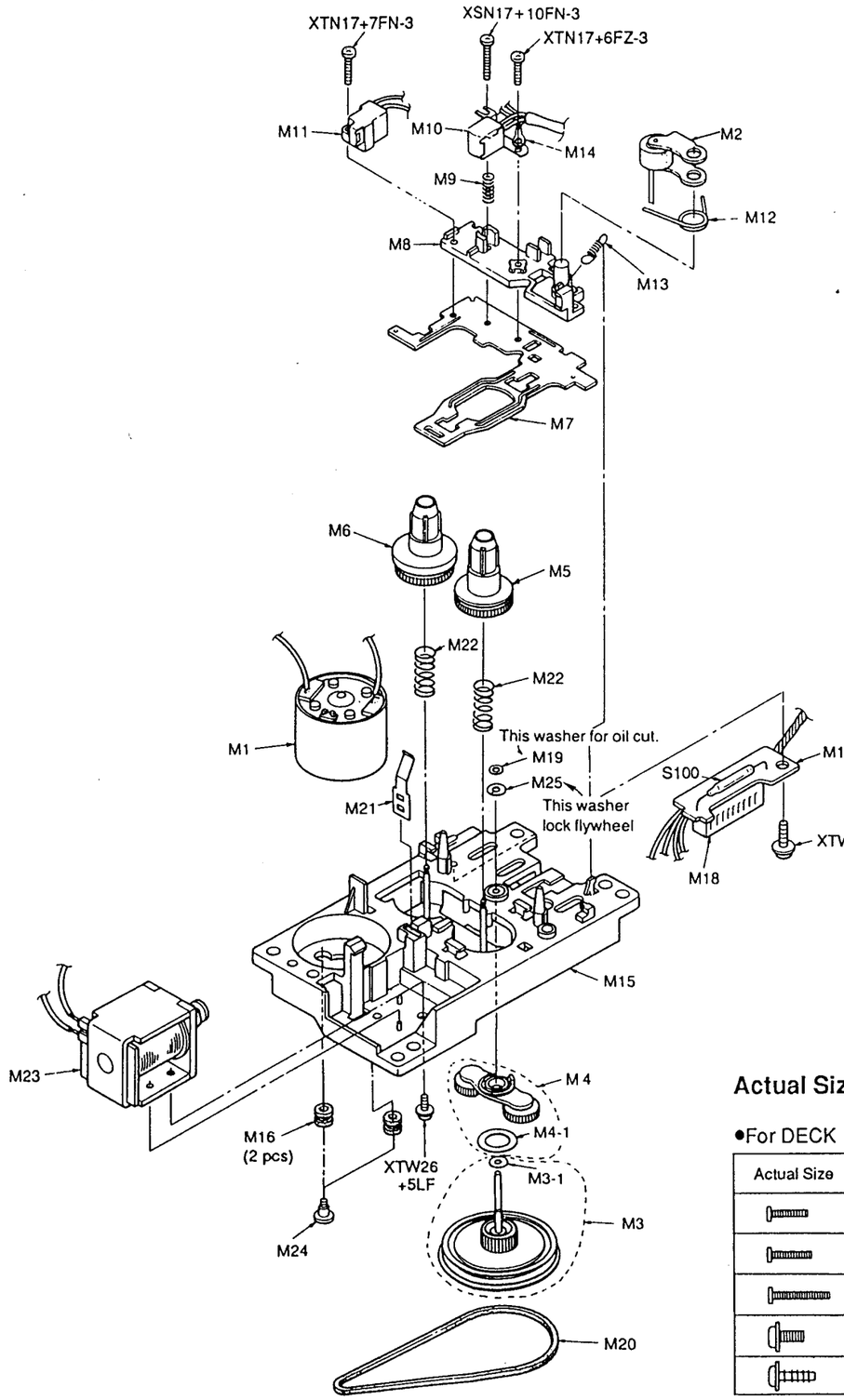


Fig. 51

Actual Size of Screws

•For DECK

Actual Size	Part No.
	XSN17+6FZ-3
	XSN17+7FN-3
	XSN17+10FN-3
	XTW26+5LF-A
	XTW26+6F

BLOCK DIAGRAM (KX-T4330R)

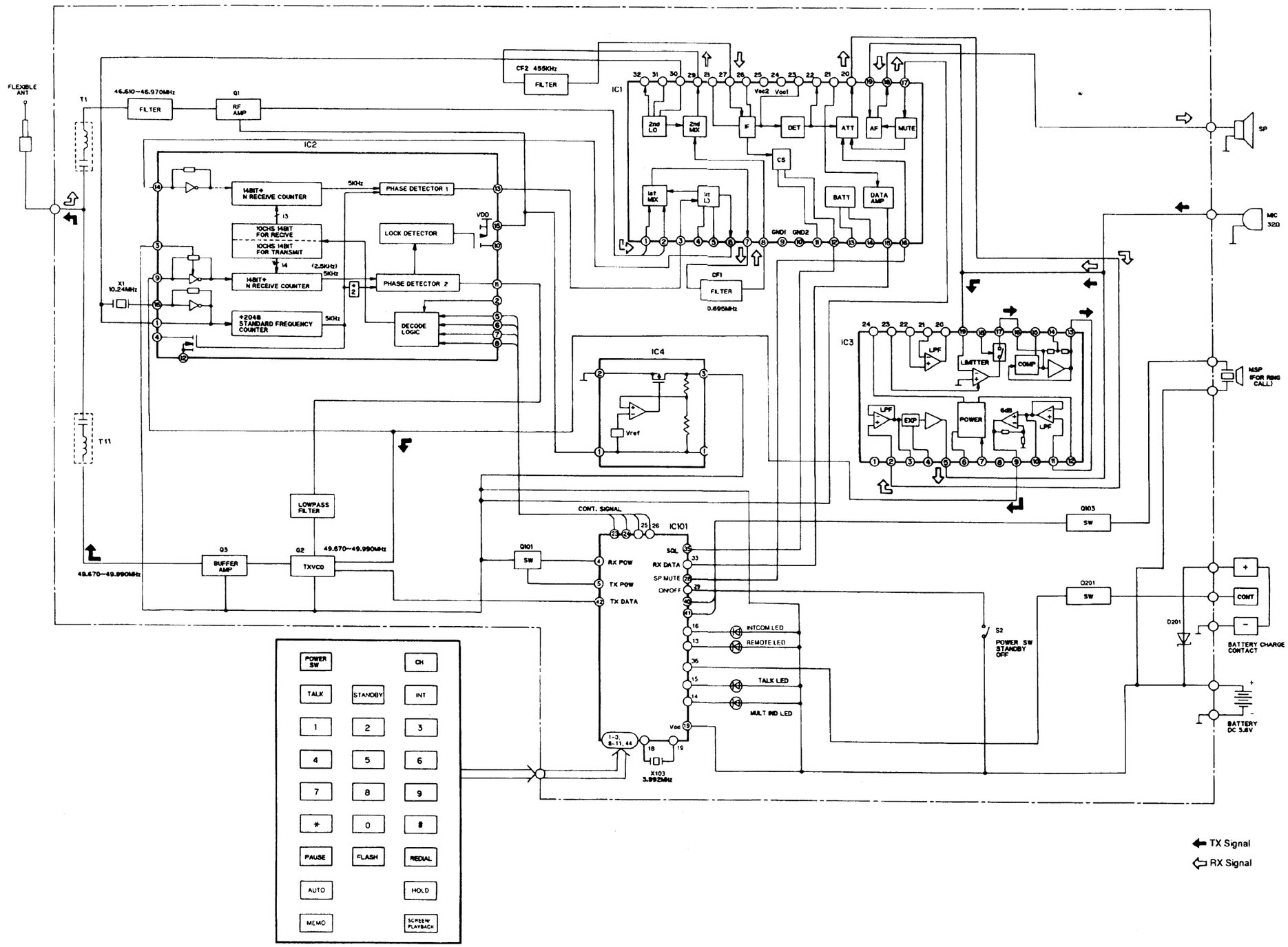


Fig. 52

BLOCK DIAGRAM (KX-T4330R)

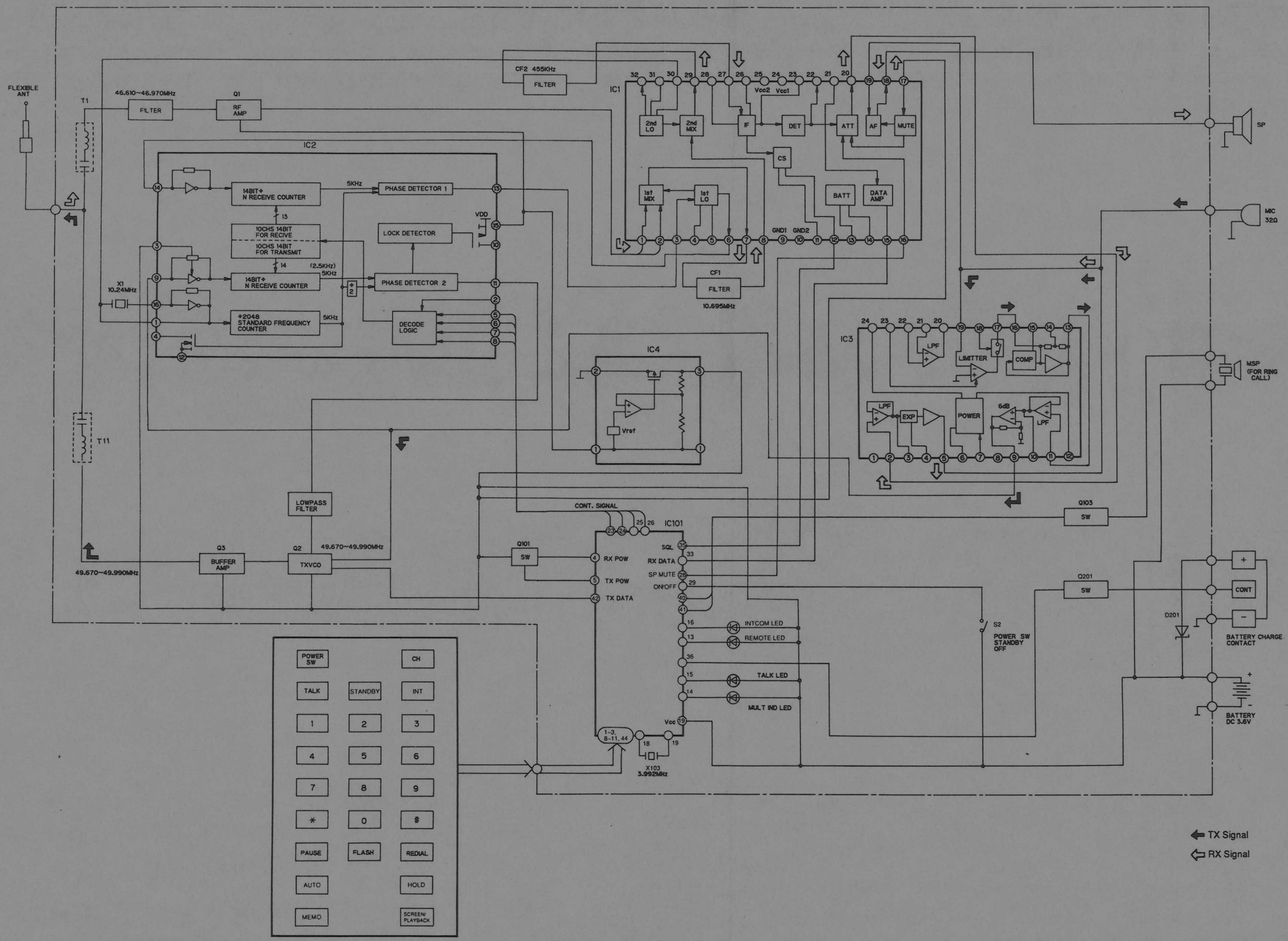


Fig. 52

CIRCUIT OPERATION (KX-T4330R)

■ OPERATION IN THE STANDBY MODE

1-1. Operation in the Standby position.

1. A call signal comes from the base unit.
2. A ring signal for incoming calls can be made from an outside caller.
3. A call signal can be sent to the base unit.

1-2. Reception Operation

a) IC101 reads the output from waveform shaping circuit when a channel has enough signal strength.

b) A signal is received by the Flexible antenna and is passed through a 46 MHz band filter T2, T3 and T4, amplified by the RF AMP (Q1), and mixed by IC1 to generate 10.695 MHz of the 1st IF.
This IF signal is then passed through filter (CF1) and again mixed by IC1 to obtain a 2nd IF frequency of 455 kHz.
This 2nd IF signal is passed through a ceramic filter (CF2), amplified by IC1 and detected by T7.

c) The data component of this signal is sent to Pin 33 of the CPU (IC101), where it is determined whether or not it matches the code.

d) When the data matches, a signal is emitted from the magnetic speaker via Q103 and pin 40 of IC101.
A call signal and a ring signal will differ in tone.

1-3. Transmission operation

Q101, controls the TX power supply, and is brought to the OFF condition by the CPU (IC101), in the OFF condition the TX part will not operate.

Circuit Diagram

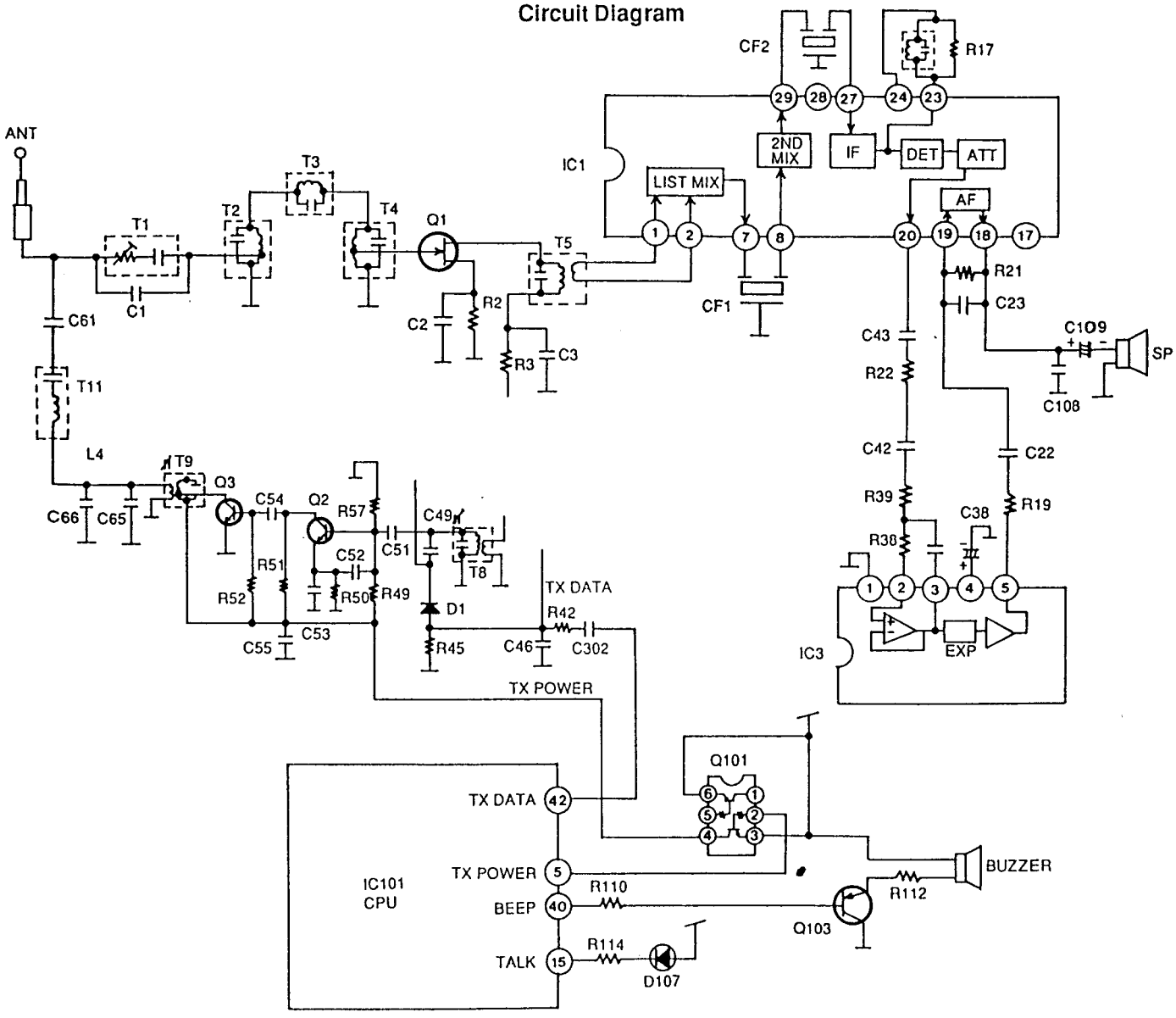


Fig. 53

■ OPERATION IN THE TALK MODE

2-1. Reception Operation

a) Same as 1-2.
b) The signal detected by IC1 is outputted from IC1 Pin 15 and applied to the volume (S1) switch.
c) The detected signal is adjusted in volume by S1 and amplified by the power amplifiers (IC3 pins 2, 5).
d) During the talk mode the muting function is released, therefore a signal is outputted to the speaker.

(See Pages 49, 50.)

2-2. Transmission operation

a) During the talk mode the CPU (IC101 pin 5) becomes a low level, and Q101 turns on, thus the transmission stage enters into the operational state.
b) The OSC circuit (Q2) oscillates at a frequency in the 49 MHz band. Power amplification is executed by the power amplifier Q3 and then transmission is made from the flexible antenna.
c) During the talk mode, first the data code is outputted by the CPU (IC101 pin 42) and is then modulated, and is transmitted. (Talking is possible only when the portable handset code and base unit code match.)
d) During pulse dialing the dial pulse signal is outputted by the CPU (IC101 pin 42). This signal is modulated by the modulation unit and then transmitted.
e) During pulse transmission, the talk indicator (green LED) will flash by the number dialed and outputted by the CPU (IC101 pin 15).

(See Pages 49, 50.)

■ INITIALIZING CIRCUIT

This circuit is for resetting the CPU (IC101) when the power of the unit is turned on.
(Reset is necessary to prevent errors in the operation of the CPU.)
When the power switch (S2) is OFF, Q106 is OFF.
When the power switch (S2) is ON, Q106 is ON.
The pulse waveform is maked by R163, and collector signal output of Q104 becomes the reset signal.

Circuit Diagram

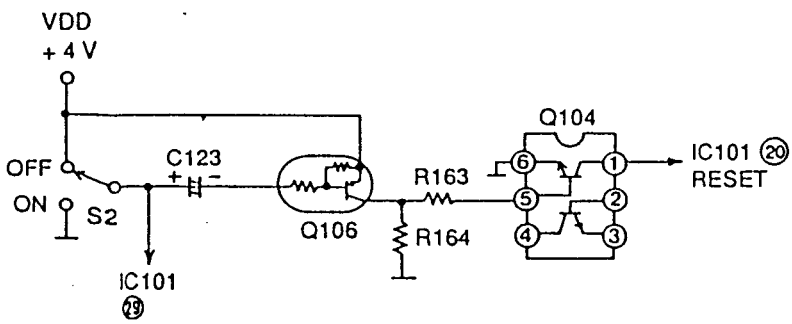


Fig. 54

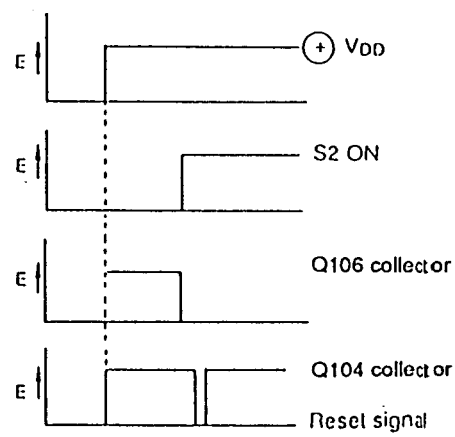


Fig. 55

■ BATTERY LOW CIRCUIT

IC1 pins 13, 14 has a stress volt level of approximately 1/2 V_{DD}.
A voltage of about 1.8 V is impressed to the gate input at pin 5 by resistance splitting with VR101 from IC4 to form a constant stabilized voltage of about 3 V.
When the power supply voltage is high (3.6 V or more), the gate input becomes $V_{DD}/2 > 1.8$ V and the output at pin 13 will become "High". This is given as an input to pin 37 of the CPU (IC101), thus pin 14 of the CPU (IC101) will become "High", and no current will flow to the LED (D108). When the battery voltage drops to about 3.6 V or less, $V_{DD}/2 < 1.8$ V is obtained, the gate input at pin 14 of IC1 will become "High", and the output at pin 13 becomes "LOW". This is given an input to pin 37 of the CPU (IC101), and pin 14 of the CPU (IC101) will become "LOW". This causes current flow to D108, and the LED will light.
The semifixed resistor VR101 is adjusted for the lighting level of the LED (D108), and the threshold voltage of IC102.

Circuit Diagram

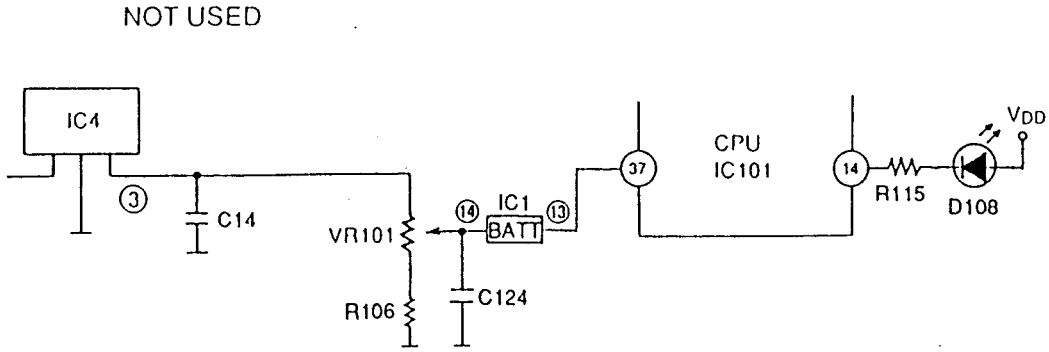


Fig. 56

■ CPU OPERATION

CPU Terminals / Operation Mode	4 RX POW	5 TX POW	14 BATT LED	15 TALK LED	23~26, CH DATA	27 MIC MUT	40 BEEP1	41 BEEP2	42, 43 TX DATA
STANDBY	L	H	H	H	—	H	L	L	L
TALK	L	L	H	L	FIXED	L	L	L	L
INTERCOM	L	L	H	L	FIXED	L	L	L	L
4330R→4330H Paging	L	L	H	FLASHING	FIXED	H	⎍⎍	L	DATA
4330H→4330R Ring	L	L	H	FLASHING	FIXED	H	⎍⎍	⎍⎍	—
4330H→4330R Paging	L	L	H	FLASHING	FIXED	H	⎍⎍	⎍⎍	—
CHARGE	L	H	H	H	—	H	L	L	L
During (INTCOM)	L	L	H	FLASHING	FIXED	H	L	L	DATA
During (TALK)	L	L	H	FLASHING	FIXED	H	L	L	DATA
4330R PULSE DIAL	L	L	H	FLASHING	FIXED	H	—	—	DATA
4330R TONE DIAL	L	L	H	FLASHING	FIXED	H	—	—	L
4330R OFF MODE	H	—	—	—	—	—	—	—	—

RF SPECIFICATION

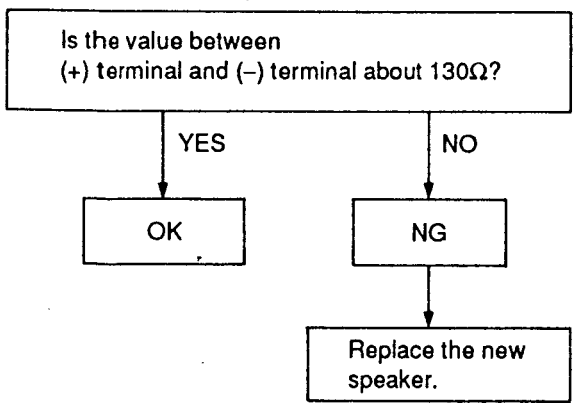
BASE UNIT (KX-T4330H)

Item	Value	Refer to —.	Remarks
TX Frequency	46.970 MHz±200 Hz	Page 11 (C)	at CH10
TX Power	85 mV±15 mV	Page 11 (D)	
TX Modulation factor	2.0 kHz~3.0 kHz	———	
TX Modulation Distortion	Less than 8%	———	
TX Max. Modulation factor	4.0 kHz~7.5 kHz	———	
Data Modulation factor	3.5 kHz~7.0 kHz	———	

Portable Handset (KX-T4330R)

Item	Value	Refer to —.	Remarks
Practical Sensitivity	Less than 9 dBμV	———	at CH5
Carrier Sensitivity	Less than 9 dBμV	Page 20 (G)	Test Mode Standby H→L at CH5
TX Frequency	49.970 MHz±100 Hz	Page 19 (D)	at CH10
TX Output	200 mV~450 mV	Page 19 (E)	at CH10 (Antenna soldering point 50Ω Load)
Data Modulation factor	5.0 kHz/dev~9.0 kHz/dev	Page 20 (H)	at CH10
MIC Modulation factor	2.2 kHz/dev~3.5 kHz/dev	———	at CH10 (MIC terminal 15 mV Input)

HOW TO CHECK THE PORTABLE HANDSET SPEAKER

1. Prepare the digital voltmeter, and set the selector knob to ohm meter.
2. Put the probes at the speaker terminals as shown in Fig. 57.
3. 

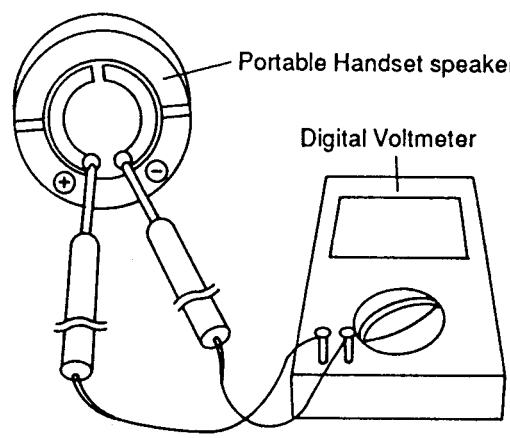


Fig. 57

TROUBLESHOOTING GUIDE

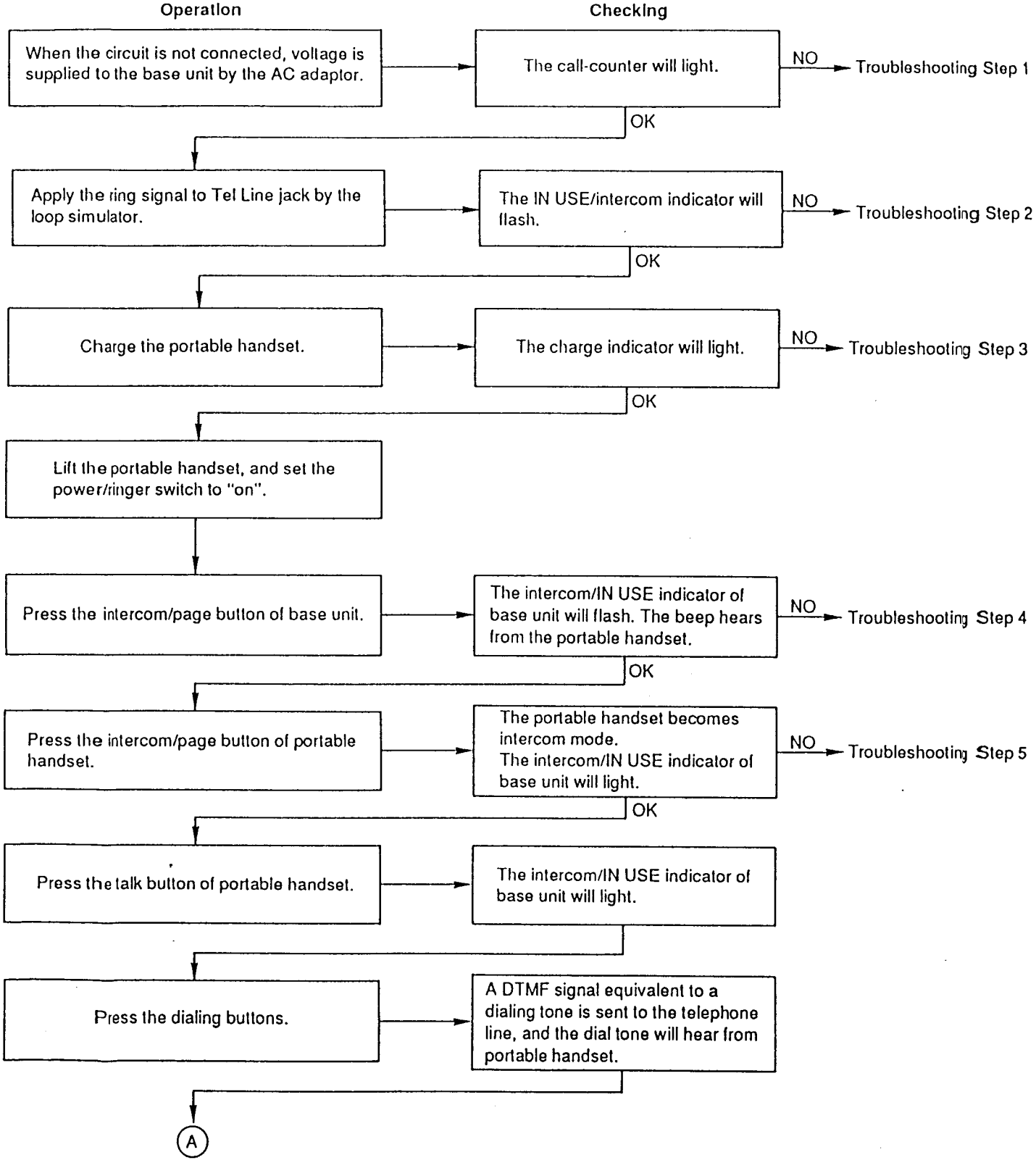
Symptom	Refer to page —.	Unit for repair
The base unit does not receive a call from portable handset.	11	Base Unit Telephone Answering System
The base unit does not transmit, and the transmit frequency is slipped.		
The transmit frequency is slipped.		
The transmit output is low, and the arrival distance is shorted between base unit and portable handset.		
The reception sensitivity of base unit is wrong, the noise is occurred.		
The call-counter does not light.	57	
The IN USE/Intercome indicators does not flash.	57	
The charge indicators does not light.	58	
The intercome/IN USE indicator does not flash.	58	
The beep does not hear from the portable handset.	58	
The portable handset does not become the intercom mode.	59	
The sound of telephone line does not hear.	59	
The portable handset does not receive.	59	
No function operate.	60	
The pull of plunger is poor or none at all.	61	
Does not answer telephone call.	62	
ICM continues to record after caller hangs up.	62	
End of message clipped when caller hangs up.	62	
Remote controller does not mark/response is poor.	62	
The movement of Battery Low indicator is wrong.	19	Portable Handset
The base unit does not receive a call from portable handset.		
The base unit does not transmit, and the transmit frequency is slipped.		
The transmit frequency is slipped.		
The transmit output is low, and the arrival distance is shorted between base unit and portable handset.		
The reception sensitivity of base unit is wrong, the noise is occured.		
Does not link between base unit and portable handset.		
After a few second, the portable handset does not battery save mode.	64	
The intercom/page indicator does not flash.	64	
The unit does not intercom mode.	65	

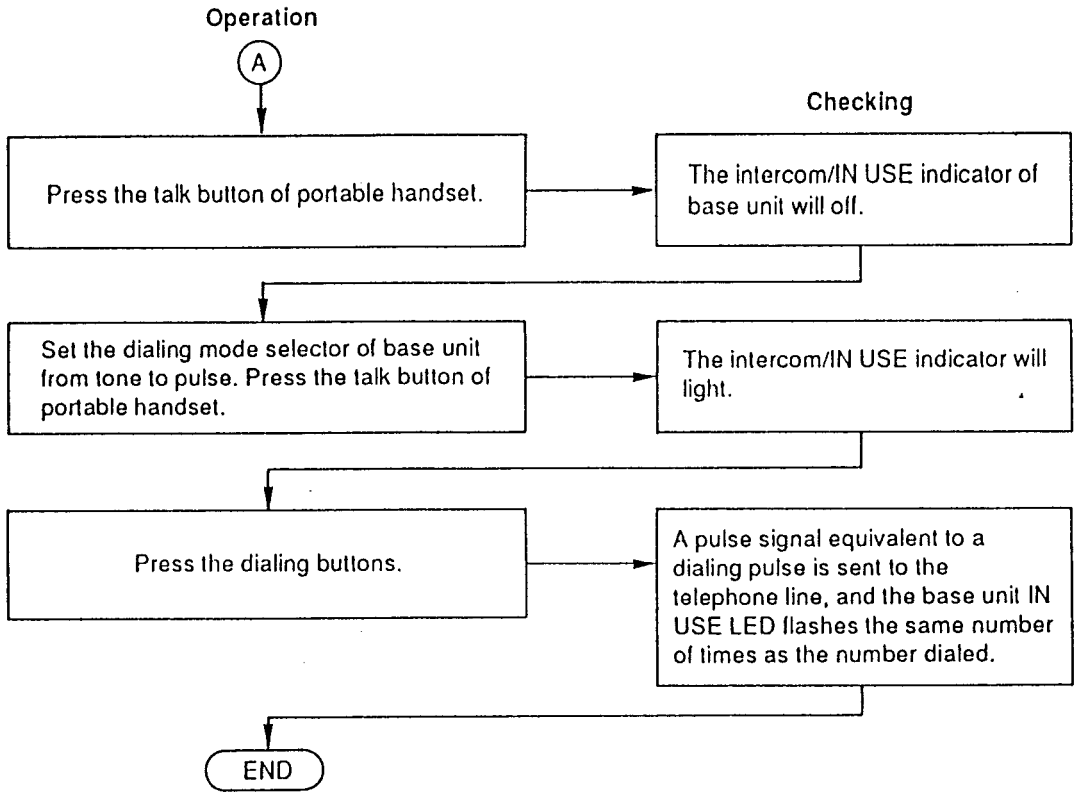
■ TROUBLESHOOTING FOR KX-T4330H

Base Unit Condition:
1. Set the volume selector to "High".
2. Set the dialing mode selector to "Tone".

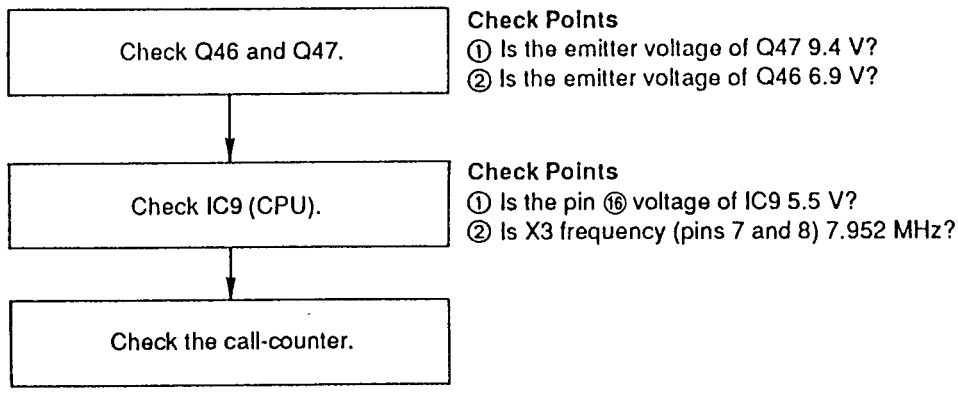
When checking the base unit and portable handset

Check the base unit as shown by following below flow chart.





Troubleshooting Step 1: **The call-counter does not light.**



Troubleshooting Step 2:

1) The IN USE/Intercom indicators does not flash.

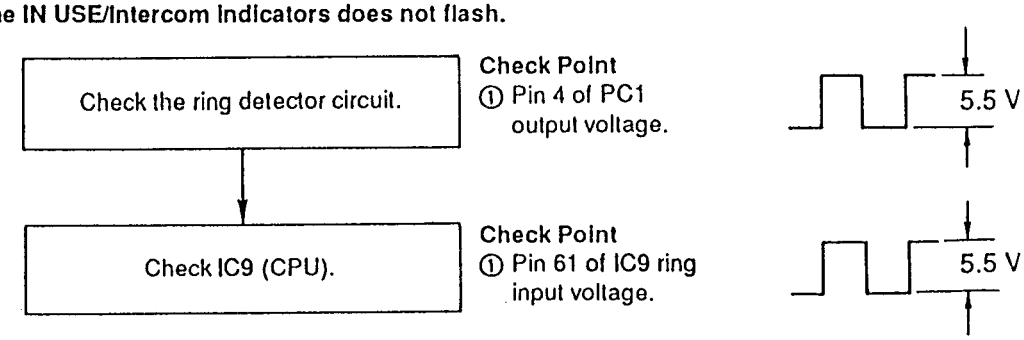


Fig. 58

Troubleshooting Step 3: The charge indicator does not light.

Check the charge detector circuit.

↓

Check IND4.

Check Point

① Is the emitter of Q50 (charge detector transistor) 6 V?

Troubleshooting Step 4:

1) The Intercom/IN USE indicator does not flash.

Check IC9 (CPU).

↓

Check IND7.

Check Point

① Is the Pin 46 of IC9 (Intercom/IN USE output) at a low logic level?

2) The beep does not hear from the portable handset.

Check the data transmition during charge mode.

↓

Check the modulation circuit (D3).

↓

Check the oscillation circuit.

↓

Check the transmitter amplifier.

Check Points

① Pin 32 of IC9 High data output voltage

② Collector of Q49 output voltage

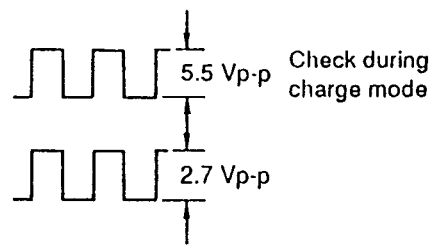


Fig. 59

Check Points

① Is the base of Q10 (TX VCO) 4 V?
② Is the Pin 11 of IC2 (PLL) 3.2 V?
③ Is the Pins 27, 28, 29, 30 of IC9 (CPU) at a all low logic level (at CH10)?

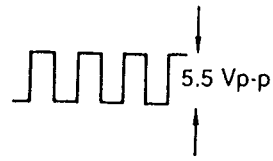
Check Point

① Is the base of Q11 (Final power amplifier) 2 V?

Troubleshooting Step 5: The portable handset does not become the intercom mode.

Check the receiver circuit.

Check Point
Pin 11 of IC1
RX data output voltage



Check during page mode of portable handset.

Fig. 60

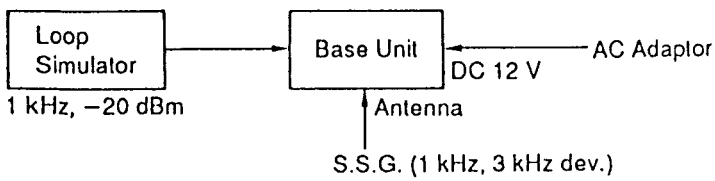
Other:

Ⓐ The sound of telephone line does not hear. (Check point: Refer to Fig. 61.)
Ⓑ The portable handset does not receive. (Check point: Refer to Fig. 62.)

Check the base unit.

Preparation:
① Set the base unit to CH10 test mode.
How to set the CH10 test mode.
(Refer to page 11.)

Connection:



Check Points:

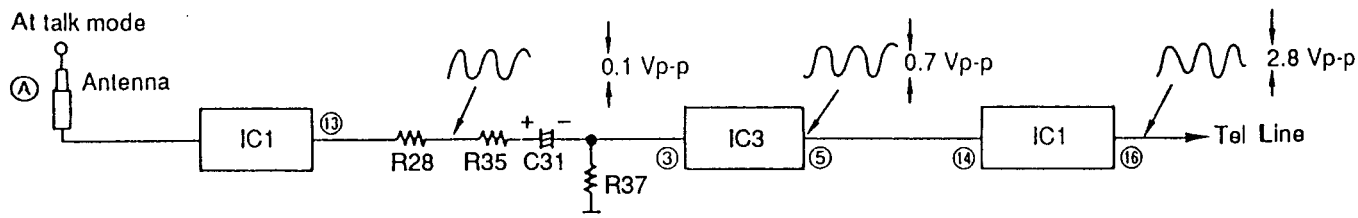


Fig. 61

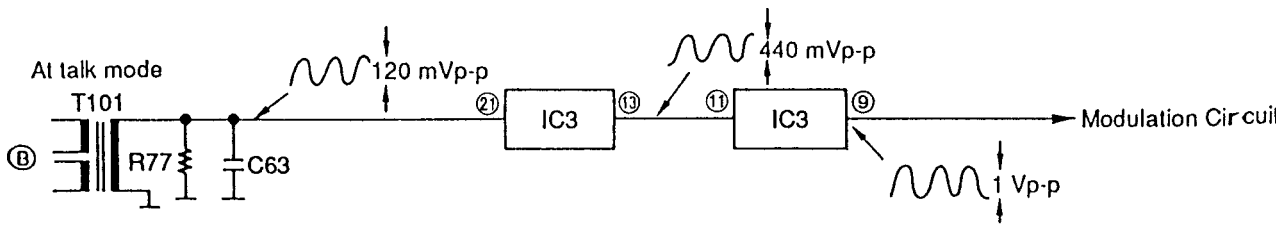
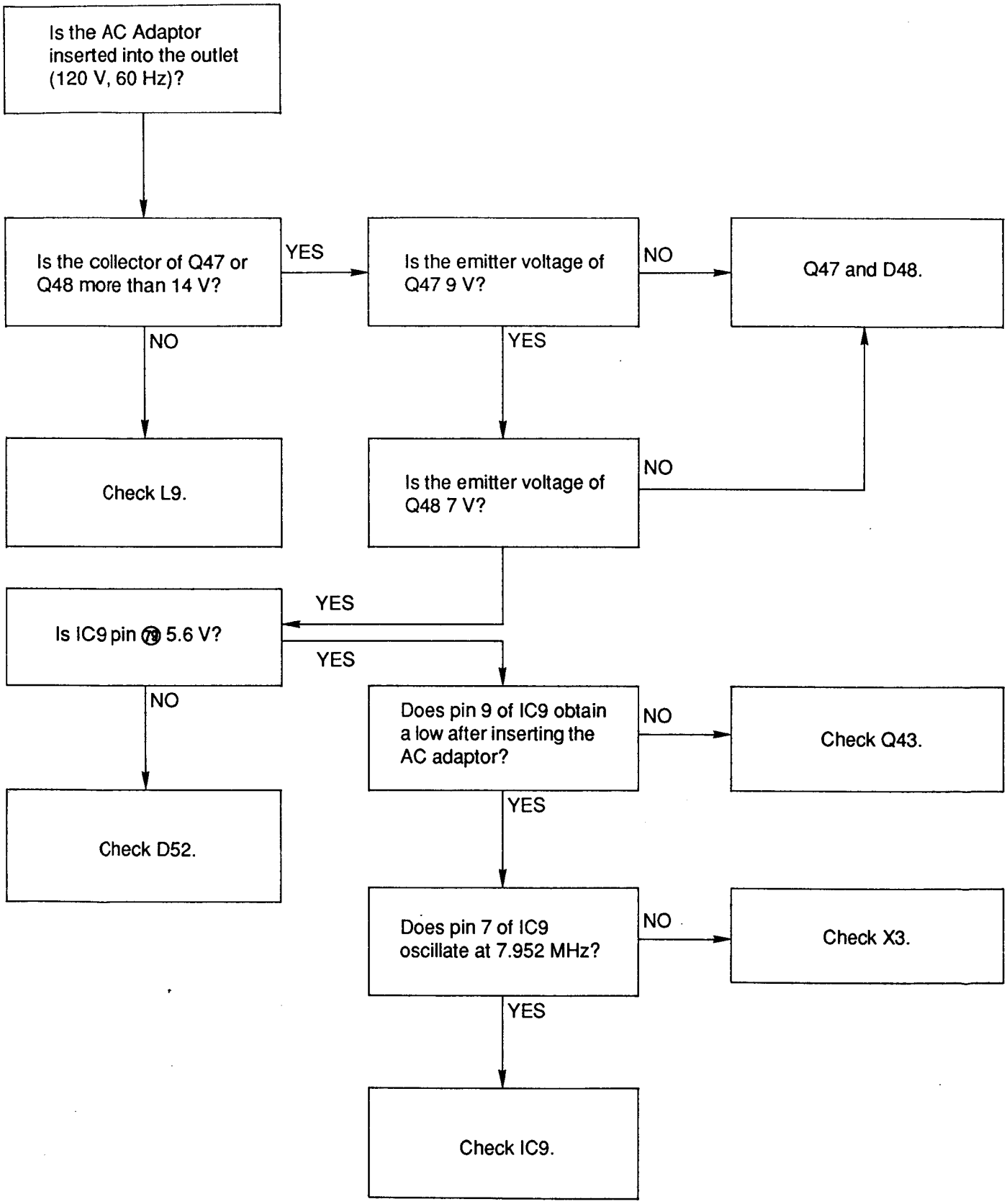


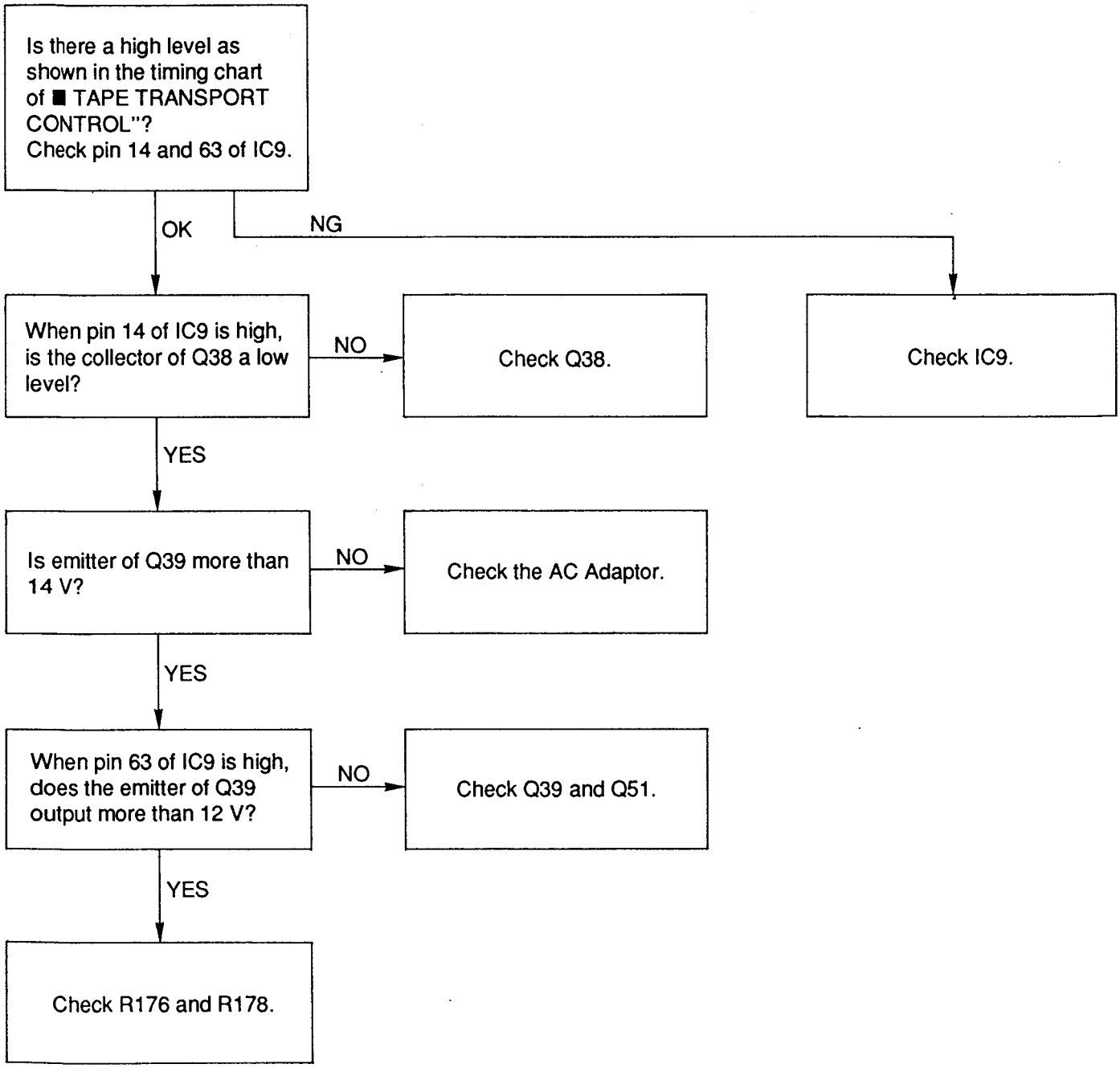
Fig. 62

■ AUTOMATIC TELEPHONE ANSWERING SYSTEM

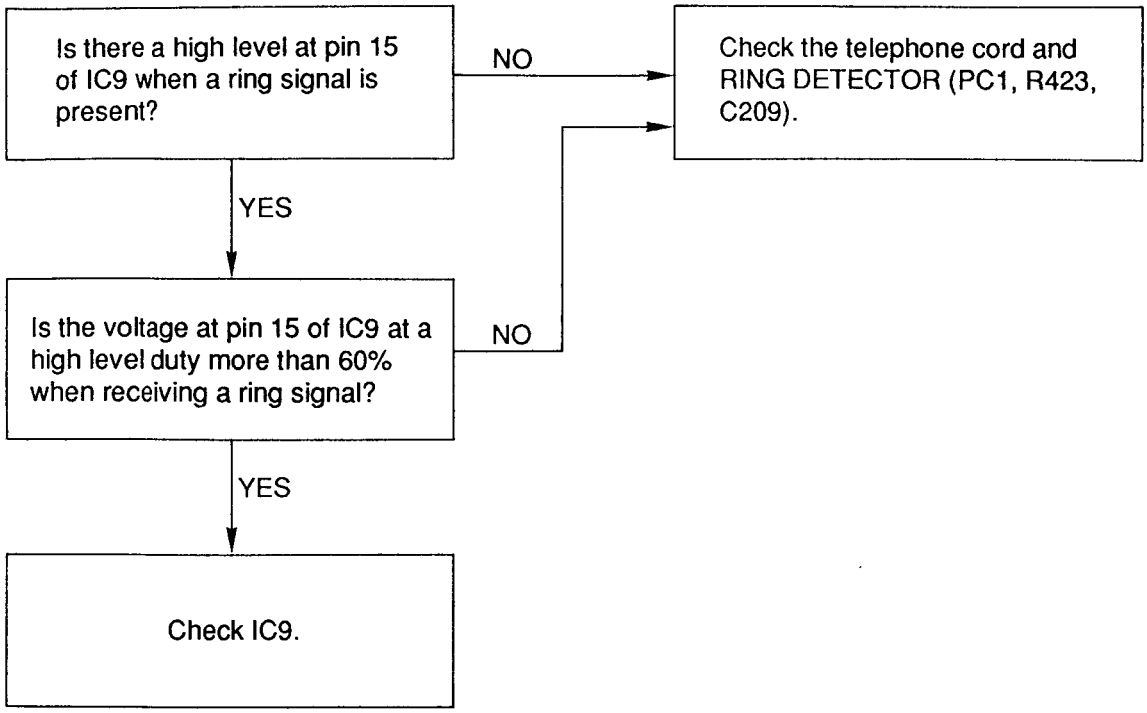
1) NO FUNCTIONS OPERATE.



2) THE PULL OF PLUNGER IS POOR OR NOT AT ALL.



3) DOES NOT ANSWER TELEPHONE CALL.



4) •ICM CONTINUES TO RECORD AFTER THE CALLER HANGS UP.
•END OF MESSAGE CLIPPED WHEN CALLER HANGS UP.

When caller hangs up, the KX-T4330 can detect the following 4 signal type.

A. CPC pulse.
B. Dial tone or other continuous tones.
C. Silence.
D. Cyclic signals.

A. Check CPC DETECTOR CIRCUIT (D103, R504, R503, PC4, IC9 pin 15).
B., C., D.
Check VOX DETECTOR (IC9 pin 47).

5) REMOTE CONTROLLER DOES NOT WORK/RESPONSE IS POOR.
The following are considered for the causes of no remote reception:

A. Is the security code the same as set on the unit.
B. High distortion in LINE OUTPUT CIRCUIT causing interference between the transmitting signal and the remote signal.
C. Excessive loss in telephone line.

A. Check the security code of the unit.
B. Check LINE OUTPUT CIRCUIT (Q52).
C. Test on telephone line known to be working properly.

*If all of the above check N.G., check the remote controller detect circuit (IC8).

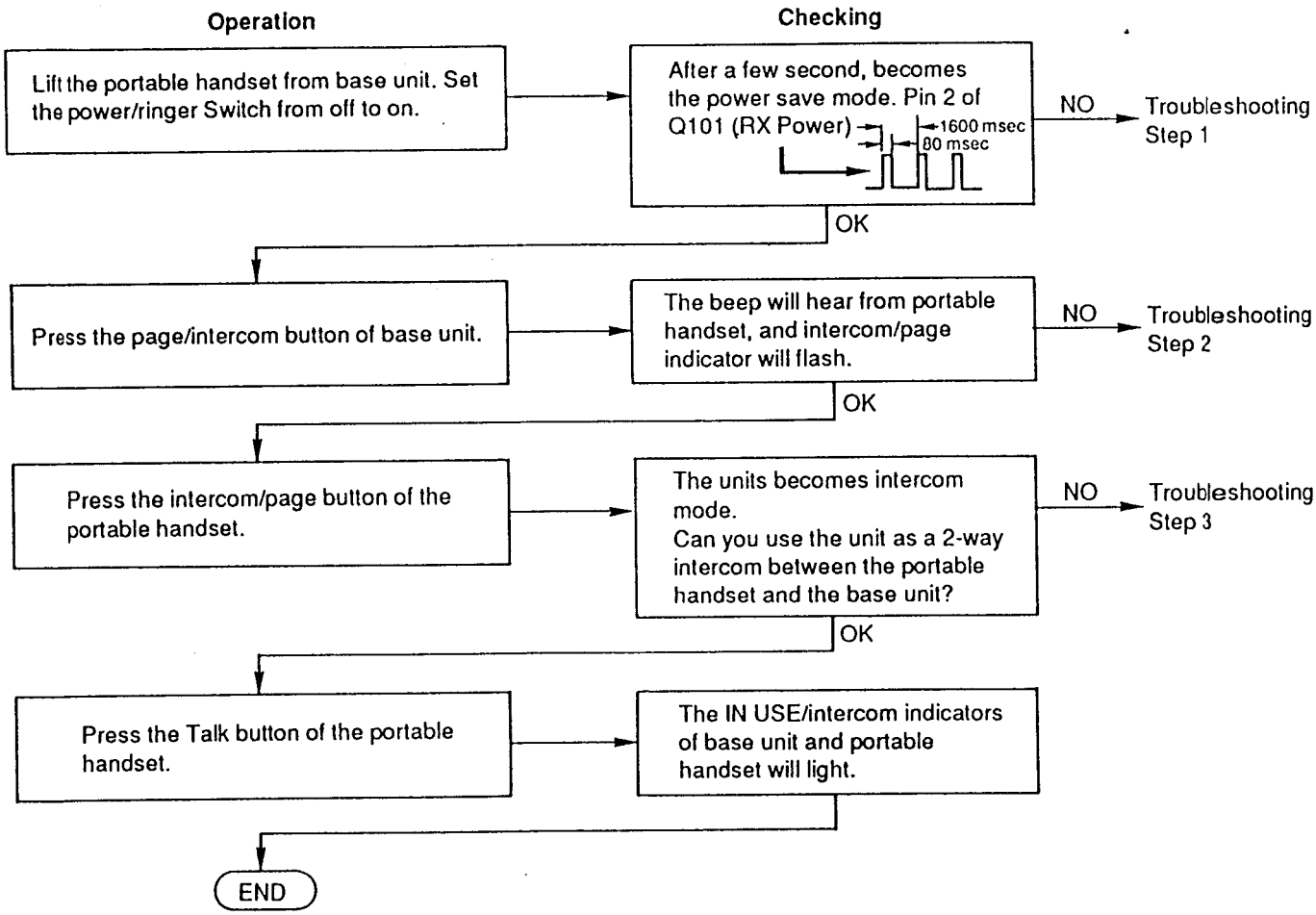
■ TROUBLESHOOTING FOR KX-T4330R

Use the right base unit for this troubleshooting.
Charge the battery of the portable handset by the base unit.

Base Unit Condition:

1. Connect the AC Adaptor (KX-A11-W-5) plug into DC IN jack and the other end into a power outlet (AC 120 V, 60 Hz).
2. Connect the loop simulator (DC 48 V) to Tel Jack.

Check the portable handset as shown by following below flow chart.



Troubleshooting Step 1: **After a few second, the portable handset does not battery save mode.**

Check the initalizing circuit. (Refer to page 52.)

Check Points

(1) Check the rechargeable battery (KX-A36A) and L101.
(2) Check the IC101 (CPU) level setting the power/ringer switch from off to on.

IC101 Pin No. \ Power/ringer switch	off	on
Pin 36	H	H
Pin 39	H	H
Pin 29	H	L
Pin 20	H	Rest Pulse 15 ms
Pins 21, 22 (X102)	——	Oscillation Start (1.2 MHz)
Pins 18, 19 (X103)	——	Oscillation Start (3. 276 MHz)

Check Point

(3) Pin 63 of IC101
RX power output voltage

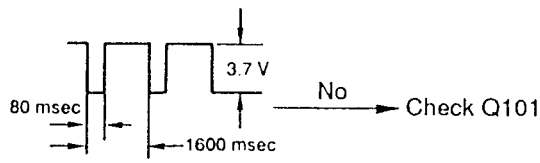
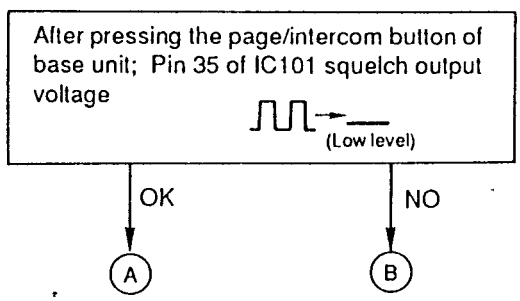


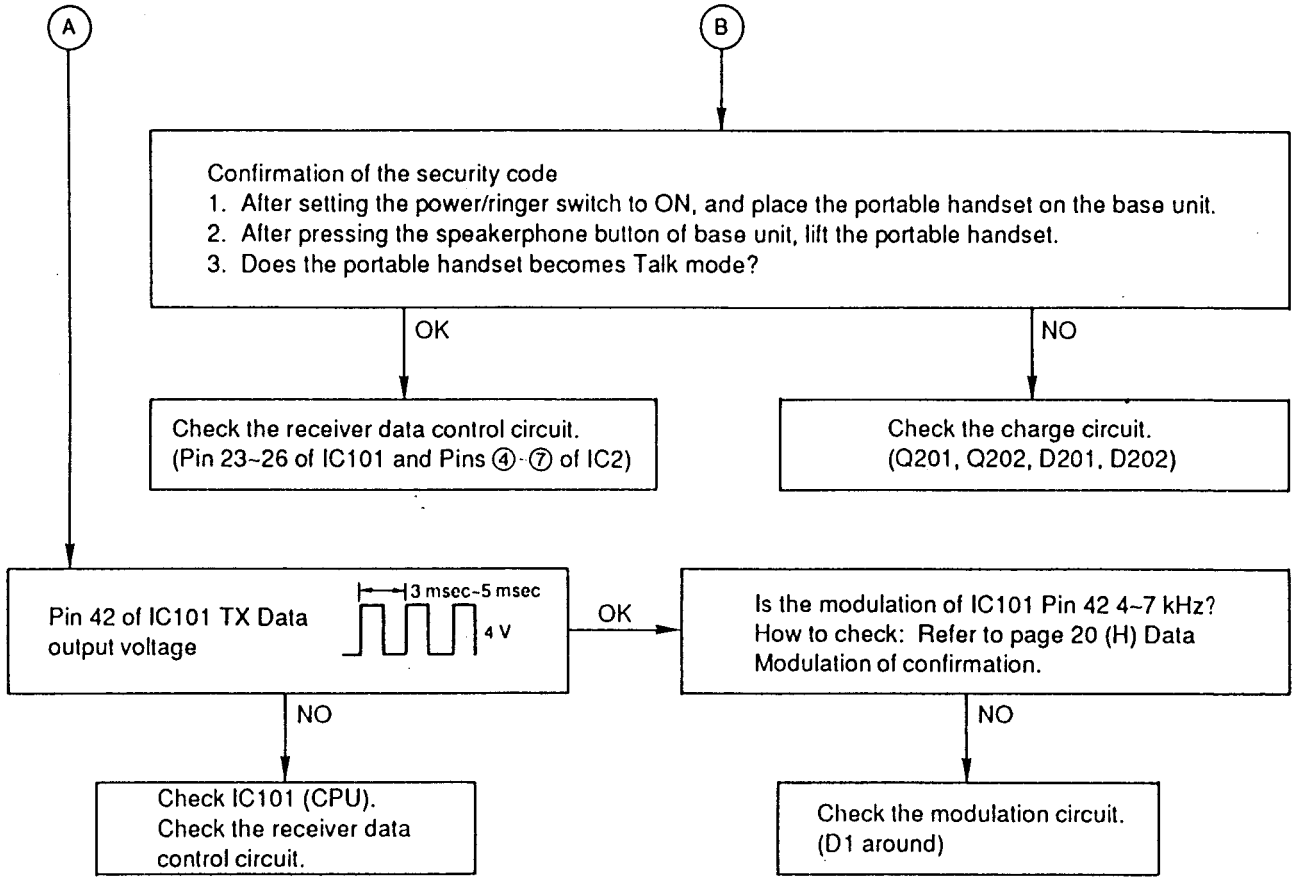
Fig. 63

Troubleshooting Step 2: **The intercom/page indicator does not flash.**

Check Point

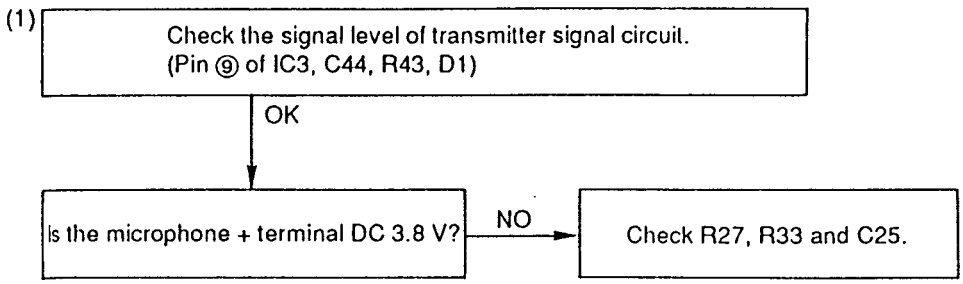
(1)





Troubleshooting Step 3: **The unit does not intercom mode.**

Check Points



(2) Check the signal level of receiver signal circuit as shown in Fig. 77.

Note: When applying the S.S.G. input level of reception 60 dBμV (3.0 kHz deviation, f=1 kHz) from the antenna, all waveform are measured.

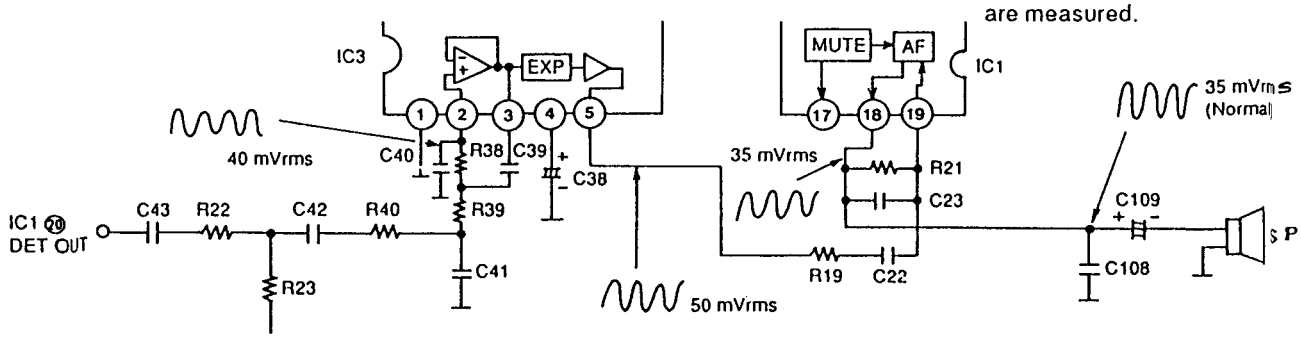
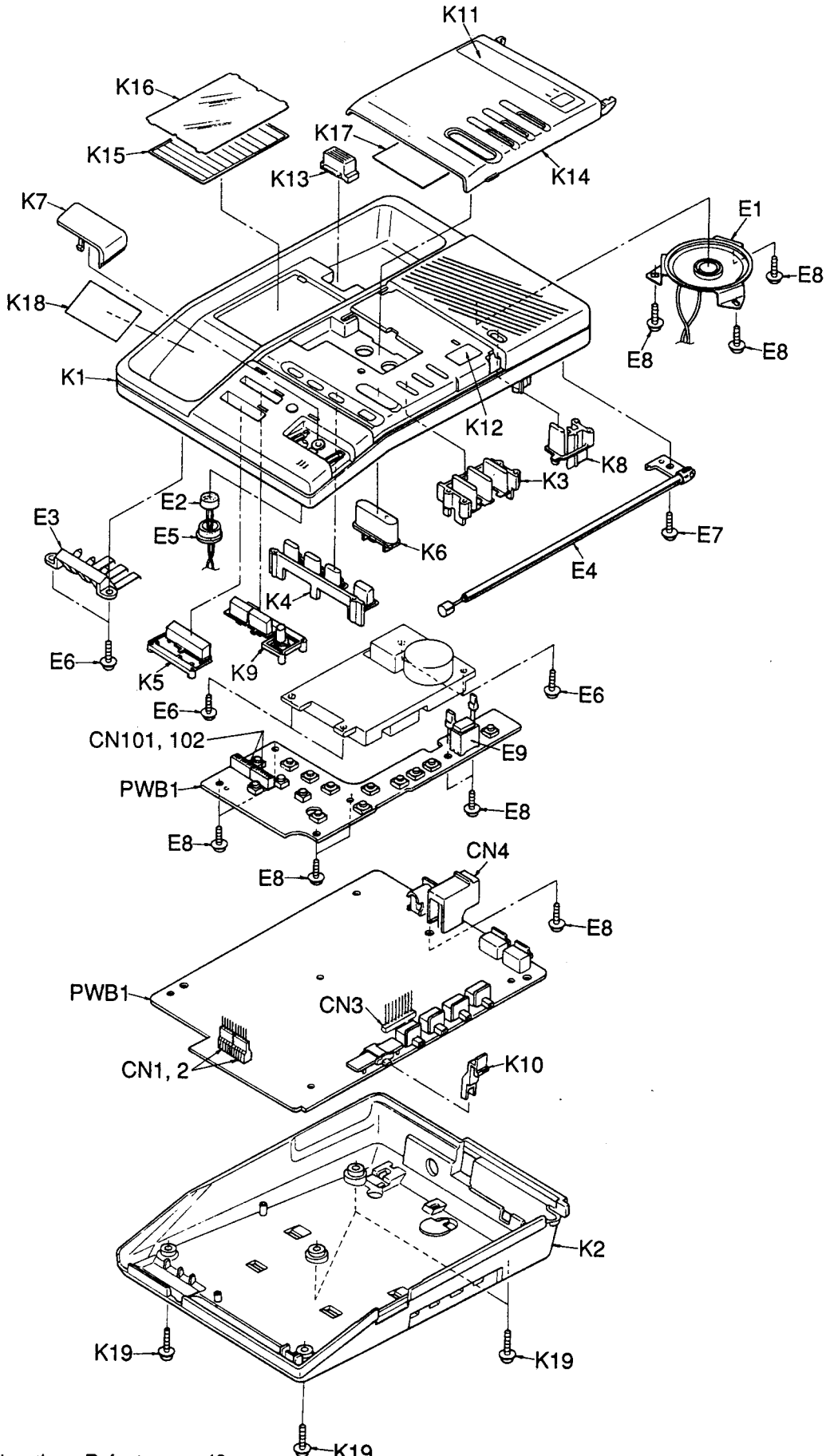


Fig. 64

CABINET AND ELECTRICAL PARTS LOCATION (KX-T4330H)



Note: Cassette parts location...Refer to page 48.

Fig. 65

CABINET AND ELECTRICAL PARTS LOCATION (KX-T4330R)

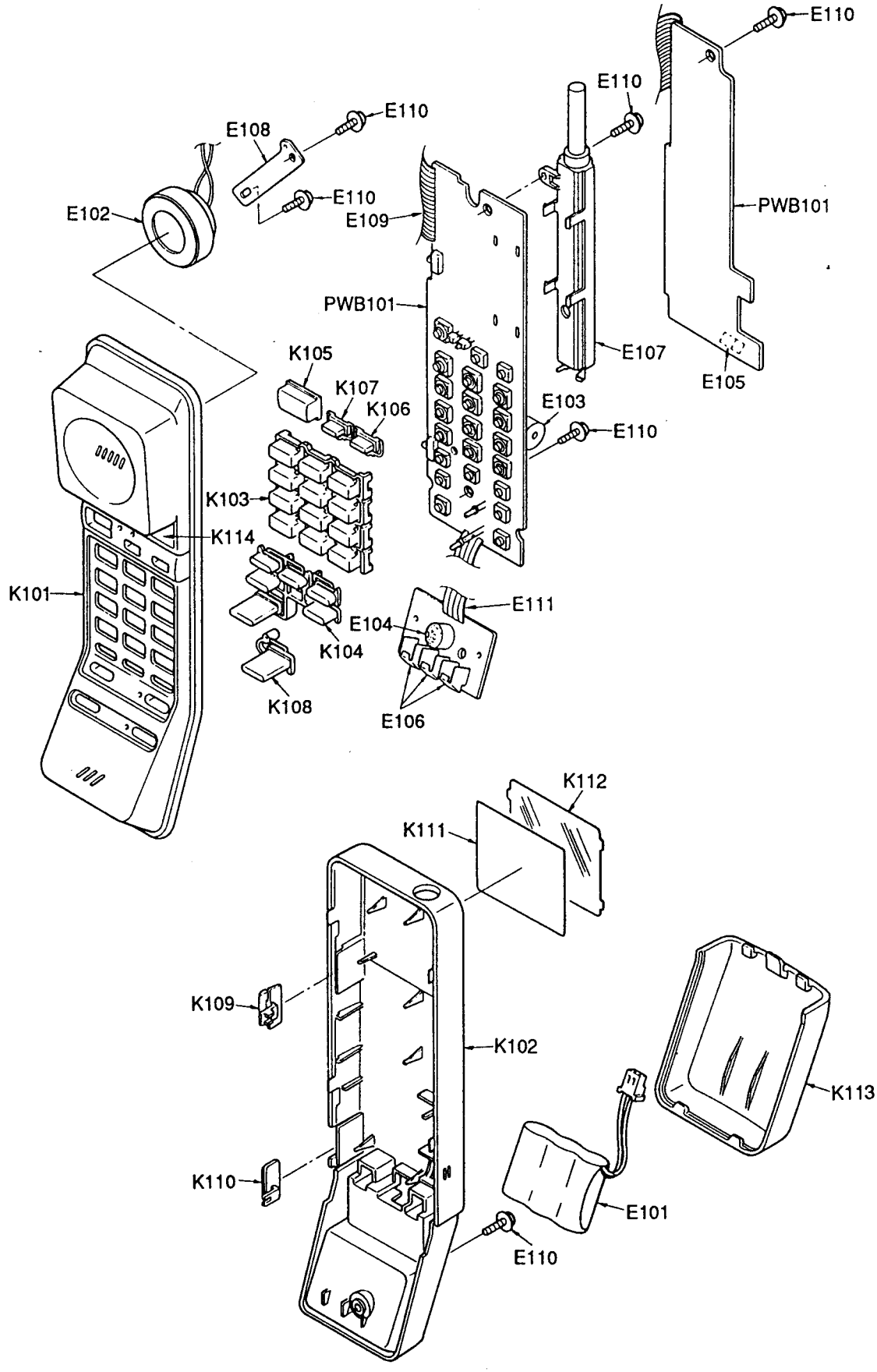


Fig. 66

ACCESSORIES AND PACKING MATERIALS

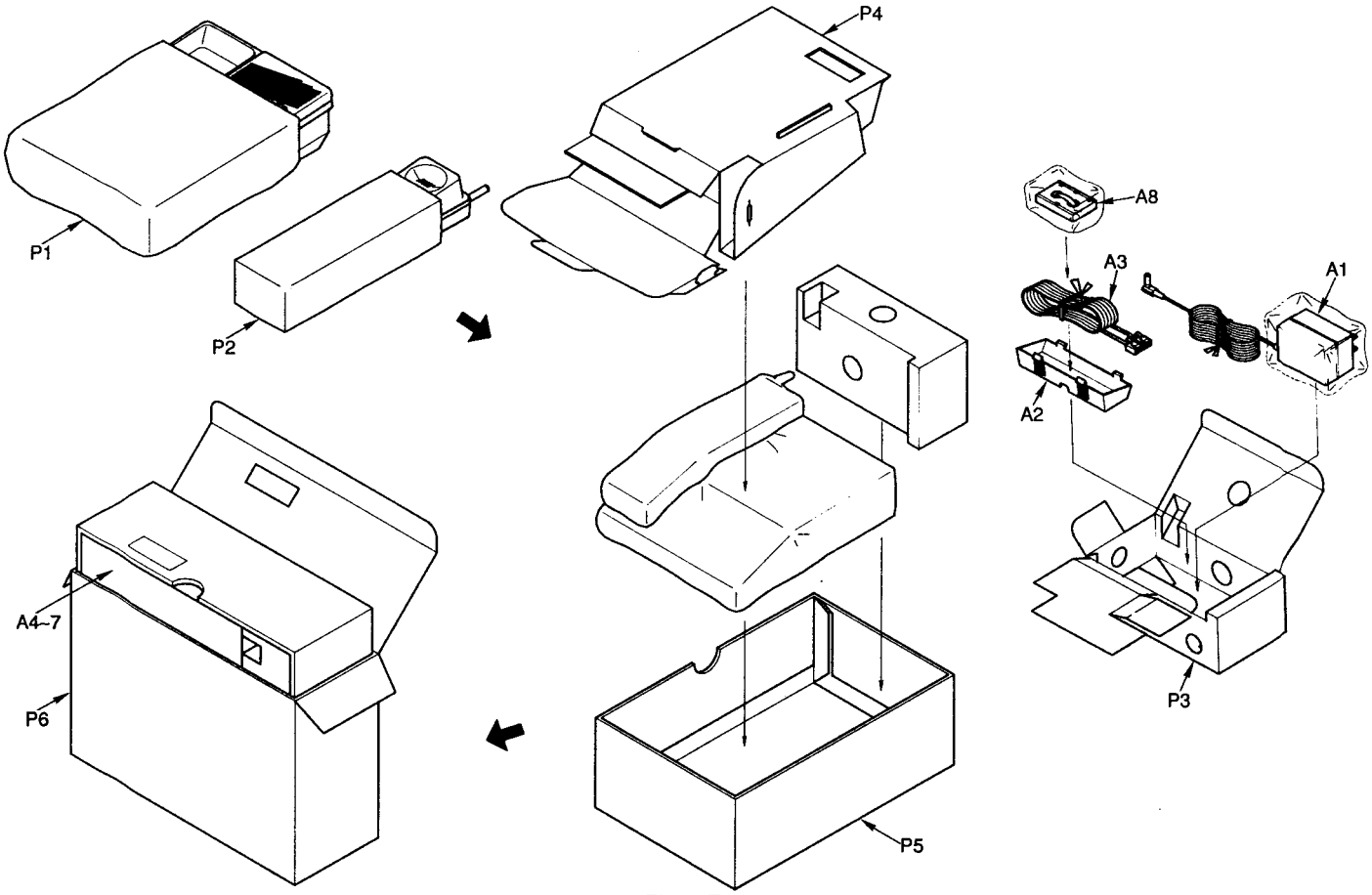


Fig. 67

TOOLS

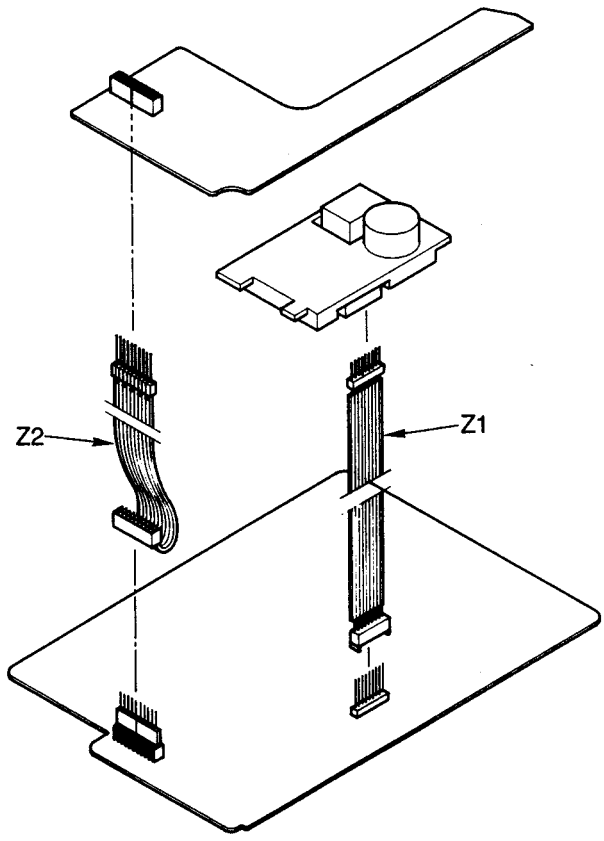


Fig. 68

This replacement parts list is U.S.A. version only. Refer to the simplified manual (cover) for Canada or other areas.

REPLACEMENT PARTS LIST

Model KX-T4330H

Notes:

1. RTL (Retention Time Limited)
   The marking (RTL) indicates that the Retention Time is limited for this item.
   After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time.
   The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention.
   After the end of this period, the assembly will no longer be available.
2. Important safety notice.
   Components identified by the ⚠ mark special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.
4. RESISTORS & CAPACITORS
   Unless otherwise specified.
   All resistors are in ohms(Ω) K=1000Ω, M=1000KΩ
   All capacitors are in MICRO FARADS(μF) P=μμF
   *Type &Wattage of Resistor

Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage of Capacitor

Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCBC : Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyester
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs
		CASSETTE DECK PARTS	
M1	PQFM9909Z	DC MOTOR	1
M2	PQFD9913Z	ROLLER	1
M3	PQFF9909Y	WHEEL	1
M3-1	PQFN35Z	WASHER	1
M4	PQFG9905Y	GEAR	1
M4-1	PQFN48Z	WASHER	1
M5	PQFR9912Z	REEL TABLE	1
M6	PQFR9914Z	REEL TABLE	1
M7	PQFD82Y	METAL PARTS	1
M8	PQFW42Y	PLASTIC PARTS	1
M9	PQFS73Z	SPRING	1
M10	PQJH1M2X	MAGNETIC HEAD	1
M11	PQJH6M2Y	MAGNETIC HEAD	1
M12	PQFS109Z	SPRING	1
M13	PQFS110Z	SPRING	1
M14	PQFJ2Z	TERMINAL-TERMINAL PLATE	1
M15	PQFC9909W	CHASSIS	1
M16	PQFI14Z	RUBBER PARTS	2
M17	PQUP864Z	PRINTED CIRCUIT BOARD	1
M18	PQJS9B30Z	CONNECTOR	1
M19	PQFN33Z	WASHER	2
M20	PQFB12Z	ANGULAR BELT	1
M21	PQFD64Z	SPRING	1
M22	PQFS82Z	SPRING	2
M23	PQFP126Y	PLUNGER	1
M24	PQHD15Z	SCREW	2
M25	PQFN49Z	WASHER	1
M26	PQHR321Z	INSULATOR	1

Ref. No.	Part No.	Part Name & Description	Pcs
		CABINET PARTS	
K1	PQKM10079Z1	CABINET BODY	1
K2	PQYF1061N7	CABINET PLATE	1
K3	PQBCX219Y	BUTTON, FF, REW, STOP	1
K4	PQBCX220Z	BUTTON, GREETING REC	1
K5	PQBC10089Z1	BUTTON, SP PHONE	1
K6	PQBC10090Z1	BUTTON, NEW MESSAGE	1
K7	PQBC299Z	BUTTON, PAGE/INTERCOM	1
K8	PQBC300Z	BUTTON, ANSWER ON	1
K9	PQBX10139Z1	BUTTON, MEMO/2WAY REC	1
K10	PQBD171Z	KNOB	1
K11	PQGG96R	GRILLE	1
K12	PQGP142Z	PANEL	1
K13	PQKE49Z	HANGER	1
K14	PQKG15V	CASSETTE DECK COVER	1
K15	PQHP5089S	MEMORY CARD	1
K16	PQHR5335Z	TRANSPARENT PLATE	1
K17	PQQT10459Z	INDICATION LABEL	1
K18	PQQT10513Z	INDICATION LABEL	1
K19	XTW3+S16M	SCREW S	5
		ELECTRICAL PARTS	
E1	PQAS5P13Z	SPEAKER	1
E2	PQJM122Z	MICROPHONE	1
E3	PQJT989Z	RECHARGEABLE BATTERY TERMINAL	1
E4	XEAPQK170D	TELESCOPIC ANTENNA	1
E5	PQHG559Z	MIC RUBBER	1
E6	XTW3+S10P	SCREW S	6
E7	XTW3+S14P	SCREW S	1
E8	XTW3+S8M	SCREW S	10
E9	PQHR9616Z	SPACER	1
CN1	PQJP05A48Z	CONNECTOR	1
CN2	PQJP05A48Z	CONNECTOR	1
CN3	PQJP9D56Z	CONNECTOR	1
CN4	PQJJ2HA2Z	JACK, TEL, DC IN	1
CN101	PQJS5X49Z	CONNECTOR	1
CN102	PQJS5X49Z	CONNECTOR	1
		PRINTED CIRCUIT BOARD PARTS	
PWB1	PQWPT4330H	P.C.BOARD ASS'Y (RTL)	1
		(ICS)	
IC1	AN6169K	IC	1
IC2	PQVI371004FT	IC	1
IC3	AN6165SB	IC	1
IC4	PQVISC79132P	IC	1
IC5	PQVIBA6218	IC	1
IC6	PQVIBA6220	IC	1
IC7	PQVITAD01GM1	IC	1
IC8	PQVIMT8870CE	IC	1
IC9	PQVI4639A16F	IC	1
IC10	PQVISC77655S	IC	1
IC101	PQVIMC7H164F	IC	1
IC102	PQVIMC7H164F	IC	1
		(TRANSISTORS)	
Q1	2SK544	TRANSISTOR(SI)	1
Q2	2SD601R	TRANSISTOR(SI) S	1
Q3	2SD601R	TRANSISTOR(SI) S	1
Q4	2SD1819A	TRANSISTOR(SI) (or 2SC4115 S)	1
Q5	2SD601R	TRANSISTOR(SI) S	1
Q6	UN5213	TRANSISTOR(SI)	1
Q7	2SD601R	TRANSISTOR(SI) S	1

This replacement parts list is U.S.A. version only. Refer to the simplified manual (cover) for Canada or other areas.

Ref. No.	Part No.	Part Name & Description	Pcs
Q8	UN5213	TRANSISTOR(SI)	1
Q9	UN5113	TRANSISTOR(SI) S	1
Q10	2SC2295	TRANSISTOR(SI)	1
Q11	2SC2412K	TRANSISTOR(SI) (or 2SC2295C)	1
Q15	2SD601R	TRANSISTOR(SI) S	1
Q16	UN5213	TRANSISTOR(SI)	1
Q21	2SD1819A	TRANSISTOR(SI) (or 2SC4155S)	1
Q27	2SD601R	TRANSISTOR(SI) S	1
Q28	2SD601R	TRANSISTOR(SI) S	1
Q29	2SD601R	TRANSISTOR(SI) S	1
Q30	2SD1819A	TRANSISTOR(SI) (or 2SC2295C)	1
Q34	XN2215	TRANSISTOR(SI)	1
Q35	2SD1991A	TRANSISTOR(SI)	1
Q37	2SC3330	TRANSISTOR(SI)	1
Q38	2SC3330	TRANSISTOR(SI)	1
Q39	2SA854	TRANSISTOR(SI)	1
Q43	2SB1218A	TRANSISTOR(SI) (or 2SA1576S, 2SA1603S)	1
Q44	2SB1218A	TRANSISTOR(SI) (or 2SA1576S, 2SA1603S)	1
Q45	2SD601R	TRANSISTOR(SI) S	1
Q46	2SD1991A	TRANSISTOR(SI)	1
Q47	2SD2137	TRANSISTOR(SI) (or 2SD2374P)	1
Q48	2SD2137	TRANSISTOR(SI) (or 2SD2374P)	1
Q49	2SC1740S	TRANSISTOR(SI) (or 2SC3330U, 2SC3311A)	1
Q50	2SA933	TRANSISTOR(SI) (or 2SA1317U, 2SA1309A)	1
Q51	2SD601R	TRANSISTOR(SI) S	1
Q52	2SD601R	TRANSISTOR(SI) S	1
Q54	2SD601R	TRANSISTOR(SI) S	1
Q55	2SD601R	TRANSISTOR(SI) S	1
Q56	2SD1819A	TRANSISTOR(SI) (or 2SC4155S)	1
Q58	2SB1218A	TRANSISTOR(SI) (or 2SA1576S, 2SA1603S)	1
Q101	2SC1740S	TRANSISTOR(SI) (or 2SC3330U, 2SC3311A) ⚠	1
Q102	2SA1625	TRANSISTOR(SI) (or 2SA1884P) ⚠	1
		(DIODES)	
D1	MA4068	DIODE(SI)	1
D2	PQVD1SV145	DIODE(SI) S	1
D3	PQVD1SV145	DIODE(SI) S	1
D4	1SS131	DIODE(SI)	1
D5	1SS131	DIODE(SI)	1
D9	1SS131	DIODE(SI)	1
D10	1SS131	DIODE(SI)	1
D21	1SS131	DIODE(SI)	1
D25	1SS131	DIODE(SI)	1
D28	MA4068	DIODE(SI)	1
D30	1SS131	DIODE(SI)	1
D31	1SS131	DIODE(SI)	1
D35	1SS131	DIODE(SI)	1
D36	MA110	DIODE(SI)	1
D43	MA110	DIODE(SI)	1
D45	MA4051	DIODE(SI)	1
D46	1SS131	DIODE(SI)	1
D47	MA4068	DIODE(SI)	1
D48	MA4100	DIODE(SI)	1
D49	MA4075	DIODE(SI)	1
D50	PQVDMTZ12A	DIODE(SI)	1
D51	1SS131	DIODE(SI)	1
D52	1SS131	DIODE(SI)	1
D101	PQVDMTZ3R6	DIODE(SI) ⚠	1
D102	1SS131	DIODE(SI) ⚠	1
D103	PQVDS1YB40F1	DIODE(SI) ⚠	1
D301	MA4056	DIODE(SI)	1
D302	1SS131	DIODE(SI)	1
D303	1SS131	DIODE(SI)	1
K	1SS131	DIODE(SI)	1
L	1SS131	DIODE(SI)	1
M	1SS131	DIODE(SI)	1
N	1SS131	DIODE(SI)	1

Ref. No.	Part No.	Part Name & Description	Pcs
IND1	PQVDSLZ151B5	LED S	1
IND2	LN224RP	LED	1
IND3	LN342GPHJF2	LED	1
IND4	PQVDSLZ151B5	LED	1
IND5	PQVDSLZ151B5	LED S	1
IND6	LN01201CU3LF	LED S	1
IND7	PQVDSLZ251B7	LED S	1
IND8	PQVD7301T188	LED S	1
		(VARIABLE RESISTORS)	
VR1	EVNDXAA03B52	VARIABLE RESISTOR	1
VR2	EWAU3AT04625	VARIABLE RESISTOR	1
		(SWITCHES)	
SW1	PQSS2A27W	SWITCH	1
SW2	PQSS2A27W	SWITCH	1
SW3	PQSS2A27W	SWITCH	1
SW4	PQSS2A27W	SWITCH	1
SW5	PQSS3A17W	SWITCH	1
SW6	PQSS3A17W	SWITCH	1
S100	PQSE91Z	REED SWITCH (FOR DECK)	1
S101	PQSH1A43Z	SWITCH	1
S102	PQSH1A43Z	SWITCH	1
S103	PQSH1A43Z	SWITCH	1
S104	PQSH1A43Z	SWITCH	1
S105	PQSH1A43Z	SWITCH	1
S106	PQSH1A43Z	SWITCH	1
S107	PQSH1A43Z	SWITCH	1
S108	PQSH1A43Z	SWITCH	1
S109	PQSH1A43Z	SWITCH	1
S110	PQSH1A43Z	SWITCH	1
S111	EVQ22405K	SWITCH	1
S112	EVQ22405K	SWITCH	1
S113	EVQ22405K	SWITCH	1
S114	EVQ22405K	SWITCH	1
		(COILS & TRANSFORMERS)	
L1	PQLQZK1R0K	COIL	1
L2	PQLQZMR56K	COIL	1
L3	PQLA7A20	COIL	1
L9	ELEPK330KA	COIL	1
L10	ELEPK330KA	COIL	1
L101	PQLQZMR56K	COIL	1
J108	ELEPK330KA	COIL	1
T1	PQLA7N2	COIL	1
T2	EIL7EL002P	COIL	1
T3	EIL7EL001P	COIL	1
T4	PQLA7A7	COIL	1
T5	PQLI2B201	I.F. TRANSFORMER	1
T6	PQLA7N1	COIL	1
T7	PQLA7A22	COIL	1
T8	PQLA7A9	COIL	1
T101	PQLT8F3A	TRANSFORMER ⚠	1
T102	PQLT8F3A	TRANSFORMER ⚠	1
		(CRYSTALS)	
X1	PQVCJ10240C5	CRYSTAL OSCILLATOR	1
X3	PQVCJ3581N9Z	CRYSTAL OSCILLATOR	1
		(OTHERS)	
SA1	PQVDRA311PT2	VARISTOR ⚠	1
VC1	ECRLA030E53	TRIMMER CAPACITOR S	1
PO1	PQRPAR390N	POSISTOR ⚠	1
PC1	PQVIPC814K	PHOTO ELECTRIC TRANSDUCER ⚠	1
PC2	PQVIPS2532-1	PHOTO ELECTRIC TRANSDUCER ⚠	1
PC3	PQVIPC817CD	PHOTO ELECTRIC TRANSDUCER ⚠	1
PC4	PQVIPC817CD	PHOTO ELECTRIC TRANSDUCER ⚠	1
CF1	RVFSFE107MSR	CERAMIC FILTER S	1
CF2	PQVFCFW455E	CERAMIC FILTER S	1

This replacement parts list is U.S.A. version only. Refer to the simplified manual (cover) for Canada or other areas.

Ref. No.	Part No.	Part Name & Description	Pcs
		(RESISTORS)	
R1	PQ4R10XJ332	3.3K	1
R2	PQ4R10XJ103	10K	1
R3	ERJ3GEYJ331	330	1
R4	PQ4R10XJ271	270	1
R5	PQ4R18XJ103	10K	1
R6	PQ4R10XJ102	1K	1
R7	ERJ3GEYJ103	10K	1
R8	ERJ3GEYJ104	100K	1
R9	ERJ3GEYJ472	4.7K	1
R10	ERJ3GEYJ104	100K	1
R11	ERJ3GEYJ222	2.2K	1
R12	PQ4R10XJ681	680	1
R13	PQ4R10XJ273	27K	1
R14	PQ4R10XJ183	18K	1
R15	PQ4R10XJ273	27K	1
R16	ERJ3GEYJ273	27K	1
R17	ERJ3GEYJ222	2.2K	1
R18	ERJ3GEYJ103	10K	1
R19	ERJ3GEYJ222	2.2K	1
R20	ERJ3GEYJ104	100K	1
R21	ERJ3GEYJ103	10K	1
R22	ERDS2TJ104	100K	1
R23	ERJ3GEYJ683	68K	1
R24	ERJ3GEYJ562	5.6K	1
R25	ERJ3GEYJ223	22K	1
R26	PQ4R10XJ391	390	1
R27	PQ4R10XJ473	47K	1
R28	ERJ3GEYJ102	1K	1
R29	ERJ3GEYJ683	68K	1
R30	PQ4R10XJ152	1.5K	1
R31	ERJ3GEYJ271	270	1
R32	ERJ3GEYJ222	2.2K	1
R33	ERJ3GEYJ684	680K	1
R34	ERJ3GEYJ820	82	1
R35	ERJ3GEYJ562	5.6K	1
R36	ERDS2TJ103	10K	1
R37	ERJ3GEYJ682	6.8K	1
R38	ERDS2TJ220	22	1
R39	PQ4R10XJ104	100K	1
R40	PQ4R10XJ101	100	1
R41	ERDS2TJ103	10K	1
R42	ERJ3GEYJ152	1.5K	1
R43	ERJ3GEYJ473	47K	1
R44	ERJ3GEYJ273	27K	1
R45	ERDS2TJ221	220	1
R46	ERJ3GEYJ683	68K	1
R47	ERJ3GEYJ473	47K	1
R48	PQ4R10XJ104	100K	1
R49	PQ4R10XJ154	150K	1
R50	ERJ3GEYJ104	100K	1
R53	ERJ3GEYJ124	120K	1
R54	ERJ3GEYJ274	270K	1
R55	ERJ3GEYJ333	33K	1
R56	ERJ3GEYJ153	15K	1
R57	ERJ3GEYJ333	33K	1
R58	ERJ3GEYJ104	100K	1
R59	ERJ3GEYJ224	220K	1
R60	ERJ3GEYJ224	220K	1
R61	ERD25TJ100	10	1
R62	ERJ3GEYJ153	15K	1
R63	ERJ3GEYJ103	10K	1
R64	ERDS2TJ473	47K	1
R65	ERJ3GEYJ333	33K	1
R66	ERJ3GEYJ333	33K	1
R67	ERDS2TJ333	33K	1
R68	ERJ3GEYJ681	680	1
R69	ERJ3GEYJ123	12K	1
R70	ERJ3GEYJ563	56K	1
R72	ERJ3GEYJ822	8.2K	1
R73	PQ4R18XJ224	220K	1
R74	PQ4R10XJ472	4.7K	1
R75	ERJ3GEYJ822	8.2K	1
R76	ERJ3GEYJ102	1K	1

Ref. No.	Part No.	Part Name & Description	Pcs
R77	ERJ3GEYJ681	680	1
R78	PQ4R10XJ472	4.7K	1
R79	PQ4R10XJ182	1.8K	1
R80	ERJ3GEYJ474	470K	1
R81	ERJ3GEYJ101	100	1
R82	ERDS2TJ223	22K	1
R84	PQ4R18XJ393	39K	1
R85	ERDS2TJ102	1K	1
R87	PQ4R10XJ682	6.8K	1
R88	ERJ3GEYJ221	220	1
R89	PQ4R10XJ153	15K	1
R90	ERJ3GEYJ334	330K	1
R91	ERJ3GEYJ333	33K	1
R92	ERJ3GEYJ122	1.2K	1
R94	PQ4R10XJ223	22K	1
R95	PQ4R10XJ333	33K	1
R100	PQ4R10XJ333	33K	1
R101	PQ4R10XJ912	9.1K	1
R102	ERJ3GEYJ563	56K	1
R103	ERDS2TJ273	27K	1
R104	ERJ3GEYJ273	27K	1
R105	ERDS2TJ824	820K	1
R106	ERD25TJ124	120K	1
R110	PQ4R10XJ183	18K	1
R111	PQ4R10XJ273	27K	1
R112	PQ4R18XJ472	4.7K	1
R113	PQ4R10XJ821	820	1
R114	PQ4R10XJ392	3.9K	1
R115	PQ4R10XJ273	27K	1
R116	PQ4R10XJ104	100K	1
R117	PQ4R10XJ225	2.2M	1
R118	PQ4R10XJ275	2.7M	1
R119	PQ4R18XJ104	100K	1
R120	PQ4R10XJ472	4.7K	1
R121	PQ4R10XJ104	100K	1
R122	ERJ3GEYJ682	6.8K	1
R123	PQ4R10XJ332	3.3K	1
R125	PQ4R10XJ183	18K	1
R126	PQ4R10XJ104	100K	1
R127	ERJ3GEYJ104	100K	1
R128	PQ4R10XJ121	120	1
R129	ERDS2TJ224	220K	1
R130	ERJ3GEYJ104	100K	1
R131	ERDS2TJ103	10K	1
R132	ERJ3GEYJ153	15K	1
R133	ERJ3GEYJ223	22K	1
R134	ERJ3GEYJ394	390K	1
R135	ERJ3GEYJ822	8.2K	1
R136	ERJ3GEYJ273	27K	1
R137	ERJ3GEYJ334	330K	1
R138	ERJ3GEYJ221	220	1
R139	ERJ3GEYJ473	47K	1
R140	ERJ3GEYJ392	3.9K	1
R141	ERJ3GEYJ334	330K	1
R142	ERJ3GEYJ103	10K	1
R143	ERJ3GEYJ820	82	1
R144	ERJ3GEYJ105	1M	1
R145	ERJ3GEYJ683	68K	1
R150	ERJ3GEYJ221	220	1
R151	PQ4R10XJ222	2.2K	1
R152	PQ4R18XJ333	33K	1
R153	PQ4R10XJ103	10K	1
R154	ERJ3GEYJ104	100K	1
R155	ERJ3GEYJ103	10K	1
R156	ERJ3GEYJ102	1K	1
R157	ERJ3GEYJ104	100K	1
R158	ERJ3GEYJ104	100K	1
R159	ERDS2TJ335	3.3M	1
R160	ERDS2TJ105	1M	1
R162	PQ4R10XJ683	68K	1
R164	ERJ3GEYJ104	100K	1
R165	ERDS2TJ225	2.2M	1
R169	ERDS2TJ221	220	1
R170	ERDS2TJ151	150	1

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Ref. No.	Part No.	Part Name & Description	Pcs
R171	ERJ3GEYJ681	680	1
R172	ERJ3GEYJ153	15K	1
R173	ERDS2TJ153	15K	1
R174	PQ4R10XJ681	680	1
R175	ERDS2TJ120	12	1
R176	ERJ3GEYJ473	47K	1
R177	PQ4R10XJ471	470	1
R178	ERDS2TJ103	10K	1
R182	ERJ3GEYJ223	22K	1
R187	ERJ3GEYJ333	33K	1
R188	ERJ3GEYJ684	680K	1
R189	ERJ3GEYJ392	3.9K	1
R190	ERJ3GEYJ104	100K	1
R191	PQ4R10XJ104	100K	1
R203	ERJ3GEYJ104	100K	1
R204	PQ4R10XJ105	1M	1
R205	ERJ3GEYJ474	470K	1
R206	ERJ3GEYJ473	47K	1
R207	ERJ3GEYJ473	47K	1
R210	PQ4R10XJ474	470K	1
R211	ERJ3GEYJ394	390K	1
R212	PQ4R10XJ473	47K	1
R213	ERJ3GEYJ102	1K	1
R214	ERJ3GEYJ103	10K	1
R215	ERD25TJ122	1.2K	1
R217	ERD25TJ221	220	1
R219	ERDS2TJ472	4.7K	1
R220	ERDS2TJ471	470	1
R221	ERDS2TJ181	180	1
R222	PQ4R10XJ104	100K	1
R223	PQ4R10XJ103	10K	1
R227	ERJ3GEYJ473	47K	1
R228	ERJ3GEYJ103	10K	1
R229	ERJ3GEYJ105	1M	1
R230	PQ4R10XJ104	100K	1
R231	ERJ3GEYJ104	100K	1
R232	ERDS2TJ104	100K	1
R233	ERDS2TJ104	100K	1
R234	ERDS2TJ104	100K	1
R235	ERJ3GEYJ562	5.6K	1
R236	ERJ3GEYJ103	10K	1
R237	PQ4R10XJ104	100K	1
R238	PQ4R10XJ333	33K	1
R250	PQ4R10XJ332	3.3K	1
R251	ERJ3GEYJ100	10	1
R302	ERDS2TJ103	10K	1
R303	ERJ3GEYJ103	10K	1
R307	ERJ3GEYJ103	10K	1
R310	PQ4R10XJ333	33K	1
R317	PQCUV1H105JC	1	1
R400	ERJ3GEYJ104	100K	1
R401	ERJ3GEYJ822	8.2K	1
R402	ERJ3GEYJ153	15K	1
R403	ERJ3GEYJ103	10K	1
R404	ERJ3GEYJ103	10K	1
R405	ERJ3GEYJ103	10K	1
R406	ERJ3GEYJ104	100K	1
R407	ERJ3GEYJ104	100K	1
R408	ERJ3GEYJ104	100K	1
R409	ERJ3GEYJ104	100K	1
R410	ERJ3GEYJ473	47K	1
R411	PQ4R10XJ473	47K	1
R412	ERJ3GEYJ472	4.7K	1
R413	ERDS2TJ683	68K	1
R416	ERDS2TJ332	3.3K	1
R417	ERDS2TJ332	3.3K	1
R418	ERJ3GEYJ334	330K	1
R419	ERJ3GEYJ333	33K	1
R420	ERJ3GEYJ102	1K	1
R422	PQ4R10XJ102	1K	1
R423	ERDS2TJ473	47K ⚠	1
R430	PQ4R10XJ104	100K	1

Ref. No.	Part No.	Part Name & Description		Pcs
R500	PQ4R10XJ334	330K		1
R503	ERDS2TJ560	56		1
R504	PQRD1VJ101	100	⚠	1
R505	ERDS2TJ682	6.8K	⚠	1
R506	PQ4R10XJ682	6.8K	⚠	1
R507	ERDS2TJ333	33K	⚠	1
R508	ERDS2TJ154	150K	⚠	1
R509	ERDS2TJ472	4.7K	⚠	1
R510	ERDS2TJ104	100K	⚠	1
R511	ERDS2TJ471	470	⚠	1
R512	ERDS2TJ181	180	⚠	1
R601	PQ4R10XJ102	1K		1
R602	ERDS2TJ102	1K		1
R603	ERD25TJ331	330		1
R604	PQ4R10XJ102	1K		1
R606	PQ4R18XJ102	1K		1
R607	PQ4R10XJ122	1.2K		1
R608	PQ4R18XJ271	270		1
R609	PQ4R10XJ681	680		1
R610	ERJ3GEYJ681	680		1
R611	ERDS2TJ681	680		1
R612	ERDS2TJ681	680		1
R613	PQ4R10XJ681	680		1
R614	PQ4R10XJ681	680		1
R615	ERJ3GEYJ681	680		1
R616	ERJ3GEYJ104	100K		1
R617	ERJ3GEYJ104	100K		1
R618	PQ4R10XJ104	100K		1
R619	PQ4R18XJ104	100K		1
R620	PQ4R10XJ104	100K		1
R621	PQ4R10XJ104	100K		1
R623	ERJ3GEYJ681	680		1
		(CAPACITORS)		1
C1	PQCBC1C222MX	0.0022	S	1
C2	PQCUV1H103KB	0.01	S	1
C3	ECUV1H150JCV	15P		1
C4	PQCUV1H100DC	10P		1
C5	ECUV1H150JCV	15P		1
C6	ECUV1H103KBV	0.01	S	1
C8	PQCUV1H103KB	0.01		1
C9	PQCUV1H103KB	0.01	S	1
C11	ECEA1EK470	47	S	1
C13	ECEA1AK221	220		1
C14	PQCUV1C683MD	0.068		1
C15	ECEA1HKS3R3	3.3	S	1
C16	ECUV1H473MDV	0.047	S	1
C17	PQCUV1H223KB	0.022	S	1
C18	ECUV1H103KBV	0.01	S	1
C19	PQCUV1C683MD	0.068		1
C20	ECUV1H470JCV	47P		1
C21	ECEA1HKS4R7	4.7	S	1
C22	PQCUV1H102J	0.001	S	1
C23	PQCUV1H102J	0.001	S	1
C24	PQCUV1E224MD	0.22		1
C25	PQCUV1C683MD	0.068		1
C26	PQCUV1E104MD	0.1	S	1
C27	PQCUV1E104MD	0.1	S	1
C28	ECEA1HKS010	1	S	1
C29	ECUV1H683ZFV	0.068	S	1
C31	ECEA1CKS100	10	S	1
C32	ECEA1HKS4R7	4.7	S	1
C33	ECUV1H103KBV	0.01	S	1
C34	PQCUV1H473MD	0.047		1
C35	PQCUV1H103KB	0.01	S	1
C36	PQCUV1H103KB	0.01	S	1
C37	PQCUV1H080DC	8P		1
C38	PQCUV1H390JC	39P		1
C39	ECUV1H470JCV	47P		1

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Ref. No.	Part No.	Part Name & Description		Pcs
C40	PQCUV1H680JC	68P		1
C41	ECEA1HKS010	1	S	1
C42	PQCUV1H330JC	33P		1
C43	PQCUV1H100DC	10P	S	1
C44	ECUV1H180JCV	18P		1
C45	ECUV1H2R5CCV	2.5		1
C46	ECUV1H102KBV	0.001		1
C47	ECFD1E103KD	0.01	S	1
C48	PQCUV1E104MD	0.1	S	1
C52	ECUV1H103KBV	0.01	S	1
C53	ECUV1H681JCV	680P		1
C54	PQCUV1E104MD	0.1	S	1
C55	ECEA1CKS100	10	S	1
C56	ECEA1CKS220	22	S	1
C57	PQCUV1C683MD	0.068		1
C58	PQCUV1E104MD	0.1	S	1
C59	ECEA1HKS4R7	4.7	S	1
C60	ECEA1CKS100	10	S	1
C62	ECUV1H271JCV	270P		1
C63	ECUV1H103KBV	0.01	S	1
C64	ECUV1H221JCV	220P		1
C65	PQCUV1E104MD	0.1	S	1
C66	PQCUV1H223KB	0.022	S	1
C67	ECEA1HKS4R7	4.7	S	1
C68	ECUV1H682KBV	0.0068		1
C69	PQCUV1E104MD	0.1	S	1
C70	PQCUV1H223KB	0.022	S	1
C71	ECEA1CKS100	10	S	1
C73	ECUV1H153KBV	0.015	S	1
C74	ECUV1H820JCV	82P		1
C75	ECEA1CKS100	10	S	1
C76	PQCUV1H222KB	0.0022	S	1
C78	PQCUV1E104MD	0.1	S	1
C81	ECFD1E183KD	0.018	S	1
C86	ECEA1HKS3R3	3.3	S	1
C87	ECEA1HKS010	1		1
C88	PQCUV1E473MD	0.047		1
C89	ECUV1H103KBV	0.01	S	1
C90	PQCUV1H103KB	0.01	S	1
C91	ECEA1CKS100	10	S	1
C92	PQCUV1E473MD	0.047		1
C93	ECEA1CKS100	10	S	1
C94	ECEA1HKSR47	0.47		1
C95	ECEA1CK101	100	S	1
C96	ECUV1H681JCV	680P		1
C97	PQCUV1H153KB	0.015	S	1
C98	ECUV1H102KBV	0.001		1
C99	PQCUV1H471JC	470P	S	1
C100	PQCUV1H103KB	0.01	S	1
C101	ECEA1AKS330	33	S	1
C102	PQCUV1E104MD	0.1	S	1
C103	PQCUV1H103KB	0.01	S	1
C105	ECEA0JKA331	330		1
C106	PQCUV1H103KB	0.01	S	1
C107	PQCUV1E104MD	0.1	S	1
C108	PQCUV1E104MD	0.1	S	1
C109	ECFD1C104KD	0.1	S	1
C111	PQCUV1H473MD	0.047		1
C112	ECUV1H121JCV	120P		1
C113	PQCUV1H103KB	0.01	S	1
C114	ECEA1CKS100	10	S	1
C115	PQCUV1C683MD	0.068		1
C116	ECEA1HKS010	1	S	1
C117	ECEA1HKS010	1	S	1
C118	ECEA1EK470	47	S	1
C119	ECEA1HKS4R7	4.7	S	1
C120	PQCUV1C683MD	0.068		1
C121	ECEA1HKS010	1	S	1
C122	PQCUV1E104MD	0.1	S	1
C123	ECEA1HKS010	1		1
C124	ECEA1CK101	100	S	1
C125	ECUV1H682KBV	0.0068		1
C126	ECEA1CKS100	10	S	1
C127	ECEA1HKS4R7	4.7	S	1

Ref. No.	Part No.	Part Name & Description		Pcs
C128	ECEA1EK470	47	S	1
C129	ECEA1AK221	220		1
C130	ECEA1AU102	1000		1
C131	ECEA1HKS4R7	4.7	S	1
C132	ECUV1H472KBV	0.0047		1
C133	PQCUV1E104MD	0.1	S	1
C134	ECUV1H331JCV	330P		1
C135	ECUV1H223KBV	0.022	S	1
C136	ECUV1H101JCV	100P		1
C137	PQCUV1E104MD	0.1	S	1
C138	ECUV1H104ZFV	0.1	S	1
C139	PQCUV1H223KB	0.022	S	1
C140	PQCUV1E104MD	0.1	S	1
C141	ECUV1H102KBV	0.001		1
C142	ECUV1H102KBV	0.001		1
C146	ECEA1CKS100	10	S	1
C147	PQCUV1H103KB	0.01	S	1
C148	PQCUV1E104MD	0.1	S	1
C149	PQCUV1E104MD	0.1	S	1
C151	ECUV1H104MD	0.1	S	1
C154	PQCUV1E104MD	0.1	S	1
C155	PQCUV1E104MD	0.1	S	1
C156	PQCUV1H103KB	0.01	S	1
C157	PQCUV1H103KB	0.01	S	1
C158	ECEA1CKS100	10	S	1
C166	ECFD1C104KD	0.1	S	1
C167	ECUV1H102KBV	0.001		1
C168	ECUV1H103KBV	0.01	S	1
C169	ECEA1AKS221	220		1
C173	ECEA0JU222	2200		1
C174	PQCUV1E104MD	0.1	S	1
C175	ECEA1CK101	100	S	1
C176	ECEA1CKS220	22	S	1
C177	PQCUV1H103KB	0.01	S	1
C178	ECEA1AK221	220		1
C179	ECEA1AK221	220		1
C180	PQCUV1H103KB	0.01	S	1
C181	PQCUV1H103KB	0.01	S	1
C182	PQCUV1H103KB	0.01	S	1
C183	PQCUV1H103KB	0.01	S	1
C187	PQCUV1H103KB	0.01	S	1
C190	ECUV1H220JCV	22P		1
C191	ECUV1H220JCV	22P		1
C193	ECUV1H103KBV	0.01	S	1
C201	ECFD1C104KD	0.1	S ⚠	1
C202	ECFD1E223KD	0.022	S ⚠	1
C203	ECFD1E103KD	0.01	S ⚠	1
C204	ECEA1HU2R2	2.2	⚠	1
C205	ECFD1E103KD	0.01	S ⚠	1
C206	ECEA1CU221	220	⚠	1
C207	ECKD2H681KB	680P	S ⚠	1
C208	ECKD2H681KB	680P	S ⚠	1
C209	ECQE2224KF	0.22	⚠	1
C301	PQCUV1H103KB	0.01	S	1
C302	PQCUV1H103KB	0.01	S	1
C307	PQCUV1E104MD	0.1	S	1
C317	PQCUV1H105JC	1		1
C400	PQCUV1E104MD	0.1	S	1
C401	ECEA1AKS221	220		1
C402	ECEA1AKS221	220		1
C404	ECUV1H104ZFV	0.1	S	1
C405	ECUV1H102KBV	0.001		1
C406	ECUV1H152KBV	0.0015	S	1
C407	PQCUV1H223KB	0.022	S	1
C408	PQCUV1E104MD	0.1	S	1
C410	PQCUV1E104MD	0.1	S	1
C411	ECUV1H104ZFV	0.1	S	1
C513	ECEA0JKS101	100		

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REPLACEMENT PARTS LIST

Model KX-T4330R

Notes:

1. RTL (Retention Time Limited)
   The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time.
   The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention.
   After the end of this period, the assembly will no longer be available.
2. Important safety notice.
   Components identified by the ⚠ mark special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.
4. RESISTORS & CAPACITORS
   Unless otherwise specified.
   All resistors are in ohms(Ω) k=1000Ω,M=1000kΩ
   All capacitors are in MICRO FARADS(μF) P=μμF
   *Type &Wattage of Resistor
   Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage of Capacitor
Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCBC : Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyster
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs
		CABINET PARTS	
K101	PQKM10056M1	FRONT CABINET	1
K102	PQKF200Y8	CABINET COVER	1
K103	PQBCX190Z2	BUTTON, 12KEY	1
K104	PQBCX221Z	BUTTON, PAUSE, FLASH etc.	1
K105	PQBC302Y	BUTTON, TALK	1
K106	PQBC303Z	BUTTON, CH	1
K107	PQBC303Z1	BUTTON, INT'/PAGE	1
K108	PQBC304Z	BUTTON, SCREEN/PLAYBACK	1
K109	PQBD149Y	KNOB, VOLUME	1
K110	PQBD172Z1	KNOB, POWER/RINGER	1
K111	PQHP5149Z	MEMORY CARD	1
K112	PQHR5291Z	TRANSPARENT PLATE	1
K113	PQKK61Z8	BATTERY COVER	1
K114	PQGP143Z	PANEL	1
		ELECTRICAL PARTS	
E101	KX-A36A	RECHARGEABLE BATTERY	1
E102	PQAX3P07Z	SPEAKER	1
E103	PQEFBQMB111M	BUZZER	1
E104	PQJM124Z	MICROPHONE	1
E105	PQJP2D59Z	CONNECTOR	1
E106	PQJT3119X	RECHARGEABLE TERMINAL	3
E107	PQSA807X	RECTRACTABLE FLEXIBE RUBBER ANTENNA	1
E108	PQUL145Z	METAL PARTS, SPEAKER MTG	1
E109	WBX18SH-3AA	LEAD WIRE	1
E110	XTW26+10E	SCREW	6
E111	WBX5SH-3SS	LEAD WIRE	1

Ref. No.	Part No.	Part Name & Description	Pcs
		PRINTED CIRCUIT BOARD PARTS	
PWB101	PQWPT4330RM	P.C.BOARD ASS'Y(RTL)	1
		(ICS)	
IC1	AN6168SC	IC	1
IC2	PQVISM5131DS	IC	1
IC3	AN6165K	IC	1
IC4	PQVIN7201U30	IC	1
IC101	PQVI004G896	IC	1
		(TRANSISTORS)	1
Q1	2SK543	TRANSISTOR(SI)	1
Q2	2SC2295	TRANSISTOR(SI)	1
Q3	2SC2295	TRANSISTOR(SI)	1
Q101	XN4116	TRANSISTOR(SI)	1
Q103	2SB709A	TRANSISTOR(SI)	1
Q104	XN4501	TRANSISTOR(SI)	1
Q105	2SB1218A	TRANSISTOR(SI) (or 2SA1576S, 2SA1603S)	1
Q106	UN5113	TRANSISTOR(SI)	1
Q201	2SD1819A	TRANSISTOR(SI) (or2SC4081S, 2SC4155S)	1
		(DIODES)	
D1	PQVD1SV145	DIODE(SI)	1
D101	MA700A	DIODE(SI)	1
D102	1SS131	DIODE(SI)	1
D106	LN330GPX	LED	1
D107	LN330GPX	LED	1
D108	LN28RPL	LED	1
D109	LN28RPL	LED	1
D110	PQVDHZS3ALL	DIODE(SI)	1
D112	MA110	DIODE(SI)	1
D201	MA4068	DIODE(SI)	1
D202	MA4068	DIODE(SI)	1
D203	1SS131	DIODE(SI)	1
		(VARIABLE RESISTORS)	
VR1	EVNDXAA03B35	VARIABLE RESISTOR	1
VR101	EVNDXAA03B15	VARIABLE RESISTOR	1
		(SWITCHES)	
S1, 2	ESD11H120	SWITCH	2
S101~113	PQSH1A43Z	SWITCH	13
S121, 122	EVQ22405K	SWITCH	8
124~129			
S123	EVQPJH05K	SWITCH	1
		(COILS & TRANSFORMERS)	
L4	PQLQZMR27M	COIL	1
L101	PQLQZM100K	COIL	1
L102	PQLQZM1R0K	COIL	1
T1, 11	PQLA7N1	COIL	2
T2	EIL7EL003P	COIL	1
T3	EIL7EL004P	COIL	1
T4	EIL7EL005P	COIL	1
T5	PQLA7A9	COIL	1
T6	PQLA7A11	COIL	1
T7	PQLI2B201	I.F. TRANSFORMER	1
T8	PQLA7A10	COIL	1
T9	PQLA7A7	COIL	1
		(CRYSTALS)	
X101	PQVCJ10240C5	CRYSTAL OSCILLATOR	1
X102	PQVBB1216J	CRYSTAL OSCILLATOR	1
X103	PQVCL3276N9Z	CRYSTAL OSCILLATOR	1

This replacement parts list is U.S.A. version only. Refer to the simplified manual (cover) for Canada or other areas.

Ref. No.	Part No.	Part Name & Description	Pcs
		(OTHERS)	
CF1	RVFSFE107MSR	CERAMIC FILTER	1
CF2	PQVFCFW455E	CERAMIC FILTER	1
TC1	ECRLA030E53	TRIMMER CAPACITOR	1
		(RESISTORS)	
R2	ERJ3GEYJ331	330	1
R3	ERJ3GEYJ470	47	1
R4	ERJ3GEYJ562	5.6K	1
R5	ERJ3GEYJ152	1.5K	1
R6	ERJ3GEYJ153	15K	1
R7	ERDS2TJ152	1.5K	1
R8	ERJ3GEYJ333	33K	1
R9	ERJ3GEYJ102	1K	1
R13	ERJ3GEYJ103	10K	1
R14	ERJ3GEYJ223	22K	1
R15	ERJ3GEYJ102	1K	1
R16	ERJ3GEYJ104	100K	1
R17	ERJ3GEYJ273	27K	1
R18	ERJ3GEYJ393	39K	1
R19	ERJ3GEYJ184	180K	1
R21	ERJ3GEYJ474	470K	1
R22	ERJ3GEYJ103	10K	1
R23	ERJ3GEYJ183	18K	1
R24	ERJ3GEYJ473	47K	1
R26	ERJ3GEYJ223	22K	1
R27	ERJ3GEYJ222	2.2K	1
R29	ERJ3GEYJ823	82K	1
R30	ERJ3GEYJ104	100K	1
R33	ERJ3GEYJ152	1.5K	1
R34	ERJ3GEYJ103	10K	1
R36	ERJ3GEYJ333	33K	1
R37	ERJ3GEYJ333	33K	1
R38	ERJ3GEYJ153	15K	1
R39	ERJ3GEYJ153	15K	1
R40	ERJ3GEYJ103	10K	1
R41	ERJ3GEYJ563	56K	1
R42	ERJ3GEYJ224	220K	1
R43	ERDS2TJ154	150K	1
R45	ERJ3GEYJ182	1.8K	1
R46	ERJ3GEYJ104	100K	1
R47	ERJ3GEYJ223	22K	1
R49	ERJ3GEYJ223	22K	1
R50	ERJ3GEYJ102	1K	1
R51	ERJ3GEYJ331	330	1
R52	ERJ3GEYJ563	56K	1
R53	ERJ3GEYJ0R00	0	1
R57	ERJ3GEYJ223	22K	1
R100	ERDS2TJ223	22K	1
R101	ERDS2TJ104	100K	1
R102	ERDS2TJ104	100K	1
R103	ERDS2TJ104	100K	1
R104	ERDS2TJ104	100K	1
R105	ERDS2TJ334	330K	1
R106	PQ4R10XJ184	180K	1
R109	ERDS2TJ220	22	1
R110	ERDS2TJ331	330	1
R112	PQ4R10XJ220	22	1
R113	PQ4R10XJ681	680	1
R114	PQ4R10XJ681	680	1
R115	ERDS2TJ152	1.5K	1
R116	ERDS2TJ152	1.5K	1
R122	PQ4R10XJ105	1M	1
R124	ERJ3GEYJ104	100K	1
R125	ERJ3GEYJ0R00	0	1
R131	ERDS2TJ104	100K	1
R136	PQ4R10XJ104	100K	1
R151	ERJ3GEYJ105	1M	1
R152	ERJ3GEYJ104	100K	1
R154	ERJ3GEYJ104	100K	1
R155	ERJ3GEYJ104	100K	1
R156	ERJ3GEYJ154	150K	1
R157	ERJ3GEYJ474	470K	1
R158	PQ4R10XJ106	10M	1
R159	ERJ3GEYJ105	1M	1
R160	ERJ3GEYJ105	1M	1
R161	ERJ3GEYJ105	1M	1
R163	ERJ3GEYJ103	10K	1
R164	ERJ3GEYJ104	100K	1
R165	ERJ3GEYJ154	150K	1
R201	ERDS2TS332	3.3K	1
R300	ERJ3GEYJ104	100K	1
R301	ERJ3GEYJ104	100K	1
R304	ERJ3GEYJ684	680K	1
		(CAPACITORS)	
C1	ECUV1H040CCV	4P	1
C2	ECUV1H103KBV	0.01	1
C3	ECUV1H103KBV	0.01	1
C5	ECUV1H223KBV	0.022	1
C6	PQCUV1E224MD	0.22	1
C7	PQCUV1E224MD	0.22	1
C9	ECUV1H060DCV	6P	1
C10	ECUV1H030CCV	3P	1
C11	PQCBC1H150JC	15P	1
C12	ECUV1H103KBV	0.01	1
C13	ECEA0GKS470	47	1
C14	ECUV1H103KBV	0.01	1
C15	ECUV1H472KBV	0.0047	1
C16	ECUV1H103KBV	0.01	1
C17	ECUV1H473MDV	0.047	1
C18	ECUV1H103KBV	0.01	1
C19	ECUV1H103KBV	0.01	1
C20	ECUV1H103KBV	0.01	1
C21	ECUV1H104ZFV	0.1	1
C22	ECUV1H104ZFV	0.1	1
C23	ECUV1H102KBV	0.001	1
C25	ECUV1H223KBV	0.022	1
C26	ECEA0GKS101	100	1
C31	ECUV1H333KDV	0.033	1
C32	ECEA1VKS4R7	4.7	1
C33	ECEA1CKS100	10	1
C34	ECUV1H681JCV	680P	1
C35	ECEA0JKS220	22	1
C36	ECUV1H222KBV	0.0022	1
C37	ECEA1CKS100	10	1
C38	ECEA1VKS4R7	4.7	1
C39	ECUV1H223KBV	0.022	1
C40	ECUV1H331JCV	330P	1
C41	ECUV1H332KBV	0.0033	1
C42	ECUV1H104ZFV	0.1	1
C43	ECUV1H104ZFV	0.1	1
C44	ECUV1H104ZFV	0.1	1
C46	ECUV1H103KBV	0.01	1
C48	ECUV1H180JCV	18P	1
C49	ECUV1H150JCV	15P	1
C50	ECUV1H223KBV	0.022	1
C51	ECUV1H330JCV	33P	1
C52	ECUV1H680JCV	68P	1
C53	ECUV1H470JCV	47P	1
C54	ECUV1H330JCV	33P	1
C55	ECUV1H103KBV	0.01	1
C61	ECUV1H070DCV	7P	1
C62	ECUV1H471JCV	470P	1
C64	ECUV1H103KBV	0.01	1
C65	ECUV1H680JCV	68P	1
C66	ECUV1H680JCV	68P	1
C68	ECUV1H390JCV	39P	1
C101	PQCBC1C103MY	0.01	1
C102	ECEA0GKS221	220	1
C103	PQCUV1H181JC	180P	1
C104	PQCUV1H181JC	180P	1
C105	PQCUV1E104ZF	0.1	1
C106	PQCUV1H180JC	18P	1
C107	PQCUV1H180JC	18P	1
C108	PQCUV1H102J	0.001	1

This replacement parts list is U.S.A. version only. Refer to the simplified manual (cover) for Canada or other areas.

Ref. No.	Part No.	Part Name & Description	Pcs
C109	ECEA0JKS470	47	1
C122	PQCUV1E104ZF	0.1	1
C123	PQCUV1E104ZF	0.1	1
C124	PQCUV1H103KB	0.01	1
C202	PQCUV1H103ZF	0.01	1
C300	ECUV1H103KBV	0.01	1
C301	ECUV1H103KBV	0.01	1
C302	ECUV1H104ZFV	0.1	1
C303	ECUV1H103KBV	0.01	1
C304	ECUV1H104ZFV	0.1	1
C305	ECUV1H473MDV	0.047	1
C306	PQCUV1E224MD	0.22	1
C310	ECUV1H680JCV	68P	1
C310A	PQCBC1C103MY	0.01	1

KX-T4330			
Ref. No.	Part No.	Part Name & Description	Pcs
		ACCESSORIES	
A 1	KX-A11-W-5	AC ADAPTOR ⚠	1
A 2	PQKL28Z7	WALL MOUNT BACKET	1
A 3	PQJA59V	TEL CORD	1
A 4	PQQW10357Z	QUICK REFERENCE CARD (ENGLISH)	1
A 5	PQQW10358Z	QUICK REFERENCE CARD (SPANISH)	1
A 6	PQQX10425Z	INSTRUTION BOOK	1
A 7	PQQW10043Z	DIAL CARD	1
A8	PQJN1M30AY	CASSETTE TAPE (30 MIN)	1
		PACKING MATERIALS	
P 1	PQPP170Z	PROTECTION COVER	1
P 2	PQPP94W	PROTECTION COVER	1
P 3	PQPN10214Z	ACCESSORY BOX	1
P 4	PQPD10069Z	CUSHION	1
P 5	PQPN10215Z	CUSHION	1
P 6	PQPK10464Z	GIFT BOX	1
		TOOLS	
Z1	PQJS9K2Z	EXTENSION CORD, 9P	1
Z2	PQZZ10K6Z	EXTENSION CORD, 10P	1
Z3	PQZZLCT2401A (or QZZCWAT)	TEST TAPE (See page 21)	1

Notes:

1. PQJS9K2Z and PQZZ10K6Z are useful for servicing (They make servicing easy).
2. PQZZLCT2401A (or QZZCWAT) are necessities for servicing.

HOW TO REPLACE FLAT PACKAGE IC

■ PREPARATION

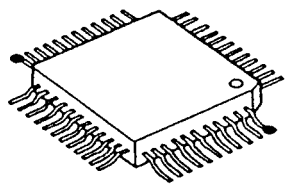
- SOLDER ..... Sparkle Solder 115A-1, 115B-1
  OR
  Almit Solder KR-19, KR-19RMA
- Soldering iron ..... Recommended power consumption will be between 30 W to 40 W.
  Temperature of Copper Rod 662 ±50° F (350 ±10° C)

  (An expert may handle 60~80 W iron, but a beginner might damage the foil by overheating)
- Flux ..... HI115 Specific gravity 0.863

  (Original flux will be replaced daily.)

■ PROCEDURE

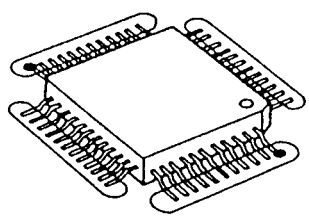
1. Temporary fix for FLAT PACKAGE IC by Soldering on the marked 2 pins.



● .....Temporary soldering point.

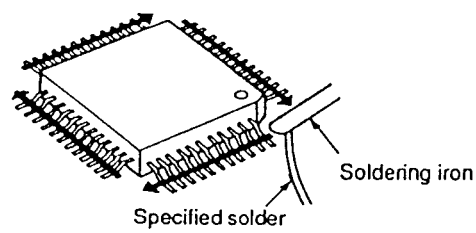
*A most important matter is the accurate setting of IC to the corresponding soldering foil.

2. Apply flux for all pins of FLAT PACKAGE IC.



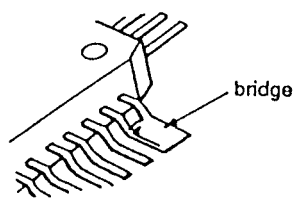
.....Flux

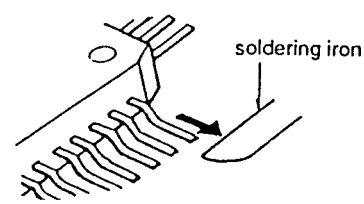
3. Employ the soldering iron as shown by the arrows in the figure below.



■ MODIFICATION PROCEDURE OF BRIDGE

1. Re-solder slightly on bridging portion.
2. Remove remained solder along pins employing soldering iron as shown in below Figure.





K, Ⓕ, KXT4330
Printed in Japan

ORDER NO. KM49308609A1
F1

Service Manual

Telephone Equipment

Simplified

AUTO-LOGIC™

Cordless Telephone Answering System

KX-T4330-B

(for U.S.A.)

- Please use this manual together with the service manual for model No. KX-T4330, order No. KM49305537.
- This service manual indicates the main differences between; Original KX-T4330 and KX-T4330-B.
- Model KX-T4330-B has been changed the cabinet color from Original KX-T4330 (white→black).

■ PARTS COMPARISON TABLE

Ref. No.	Part. No.		Part Name & Description	Pcs/ Set	Remarks
	KX-T4330	KX-T4330-B			
BASE UNIT					
K1	PQKM10079Z1	**PQKM10079Z3**	Upper Cabinet	1	
K2	PQYF1061N7	**PQYF1061J0**	Lower Cabinet	1	
K3	PQBCX219Y	**PQBCX219Y1**	Button, FF, Rew, Stop	1	
K4	PQBCX220Z	**PQBCX220Z1**	Button, Greeting Rec	1	
K5	PQBC10089Z1	**PQBC10089Z3**	Button, SP Phone	1	
K6	PQBC10090Z1	**PQBC10090Z2**	Button, New Message	1	
K7	PQBC299Z	**PQBC299Y2**	Button, Page/Intercom	1	
K8	PQBC300Z	**PQBC300Z1**	Button, Answer On	1	
K9	PQBX10139Z1	**PQBX10139Z3**	Button, Memo/2Way Rec	1	
K10	PQBD171Z	**PQBD171Z1**	Knob, Volume	1	
K11	PQGG96R	**PQGG96R1**	Grille	1	
K13	PQKE49Z	**PQKE49Z3**	Hanger	1	
K14	PQKG15V	**PQKG15V1**	Cassette Deck Cover	1	
K15	PQHP5089S	**PQHP5089Q**	Tel Card	1	
K18	PQQT10513Z	**PQQT10513Y**	Caution Label	1	
PCB1	PQWPT4330H	**PQWPT4330BH**	P.C.Board Ass'y (RTL)	1	
SW1~4	PQSS2A27W	**PQSS2A27Z**	Switch, Dialing Mode, Message Alert etc.	4	
SW5,6	PQSS3A17W	**PQSS3A17Z**	Switch, Rings, Ringer	2	
PORTABLE HANDSET					
K101	PQKM10056M1	**PQKM10056J2**	Front Cabinet	1	
K102	PQKF200Y8	**PQKF200Y0**	Cabinet Cover	1	
K103	PQBCX190Z2	**PQBCX190Z1**	Button, 12Key	1	
K104	PQBCX221Z	**PQBCX221Z1**	Button, Pause, Flash etc.	1	
K105	PQBC302Y	**PQBC302Y1**	Button, Talk	1	
K106	PQBC303Z	**PQBC303Z2**	Button, Ch	1	
K108	PQBC304Z	**PQBC304Z1**	Button, Screen/Playback	1	
K109	PQBD149Y	**PQBD149Y1**	Knob, Volume	1	
K110	PQBD172Z1	**PQBD172Z2**	Knob, Power/Ringer	1	
K111	PQHP5149Z	**PQHP5149Y**	Memory Card	1	
K113	PQKK61Z8	**PQKK61Z0**	Battery Cover	1	
K114	PQGP143Z	**PQGP143Z1**	Panel	1	
E107	PQSA807X	**PQSA807W**	Rectractable flexibe Rubber	1	
ACCESSORIES					
A1	KX-A11-W-5	**KX-A11-5**	AC Adaptor	1	
A2	PQKL28Z7	**PQKL28Z0**	Wall Mount Backet	1	
PACKING MATERIAL					
P6	PQPK10464Z	**PQPK10649Z**	Gift Box	1	

Panasonic

H (F) KXT4330B
Printed in Japan

ORDER NO. KM49404154S1
F1

Service Manual

Supplement

Telephone Equipment

KX-T4300, KX-T4330, KX-T4350
KX-T4370, KX-T4400

(for U. S. A.)

AUTO-LOGIC™
EASA-PHONE®
Cordless Telephone Answering System

Please use this manual together with the original service manual for the below model.

This supplement indicates the addition that only cover for retractable flexible antenna is supplied.

Model No.	Order No.	Sup. No.
KX-T4300	KM49106648C1	2
KX-T4330	KM49305537C1	1
KX-T4350	KM49206147C1	1
KX-T4370	KM49303492C1	1
KX-T4400	KM49211378C1	1

⚠ WARNING

This service literature is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service literature by anyone else could result in serious injury or death.

Panasonic

Models: KX-T4300, KX-T4330, KX-T4350, KX-T4370, KX-T4400

■ REPLACEMENT PARTS LIST

Ref. No.	Part No.		Part Name & Description	Pcs/ Set	Cap's Tip Color	Rubber Color
	Original	**Supplement**				
K100	—	**PQSAT4370M**	Antenna Cover	1	Blue	Gray

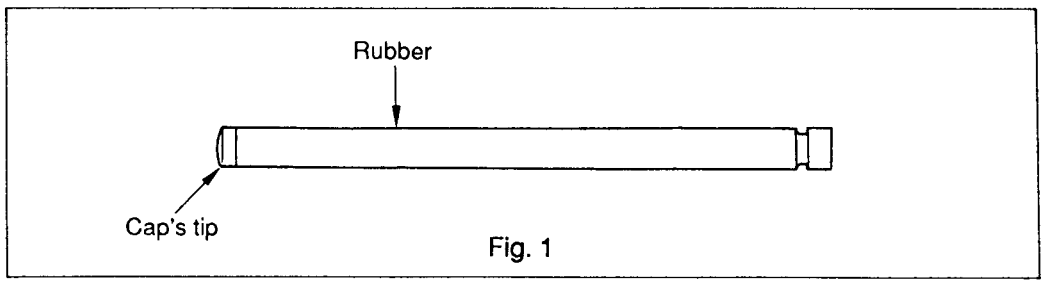


Fig. 1

■ HOW TO REMOVE THE ANTENNA COVER

1. Set the roller for antenna cover (arrow pointed out) as shown in Fig. 2.

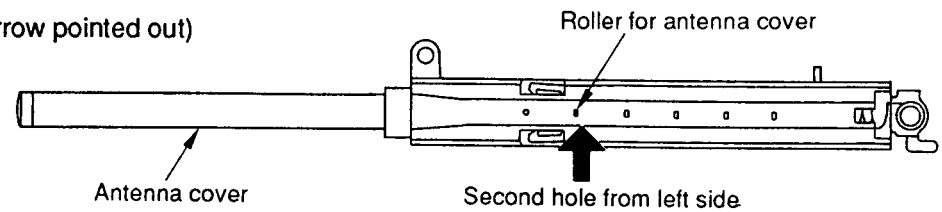


Fig. 2

2. Insert the tool (Part No. PQZZ3870M) as shown in Fig. 3.

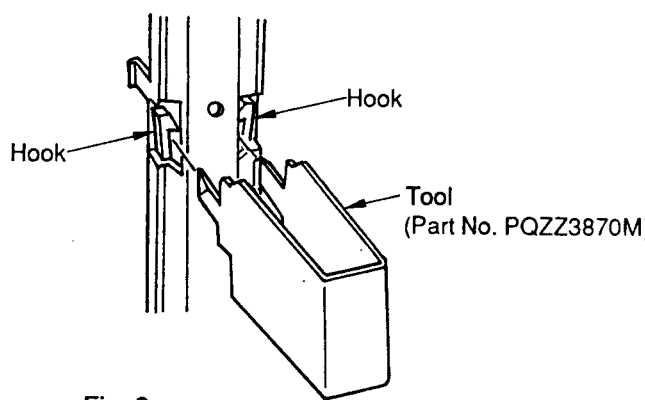


Fig. 3

3. After inserting the tool, pull the antenna cover in direction of arrow pointed out.

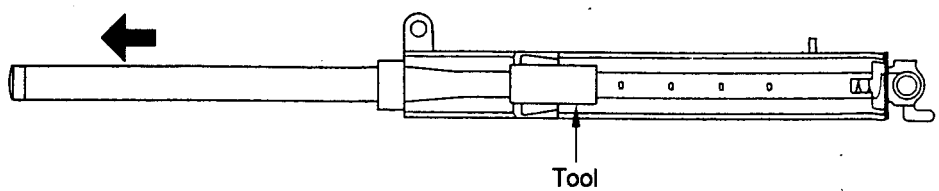


Fig. 4

■ HOW TO REPLACE THE NEW ANTENNA COVER

Replace the new antenna cover by the way of opposite procedure to disassemble.
Maintain tool (PQZZ3870M) inserted until new antenna cover has been replaced.

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